

# TA IS KI

HAT'S THE TOP PRIORITY of technology managers in corporate America? Data management, according to an exclusive Computerworld survey on IT spending plans. Cynthia Morgan reports that IT buyers want database applications that can scale up dra-

matically and connect to e-commerce sites, as well as storagearea networks to handle growing volumes of data. Other high priorities include replacing older desktop PCs, providing high-speed Internet access to telecommuters and implementing security. Story begins on page 82.

Four more manufacturers

are expected to join by May.

But the Oak Brook, Ill-based

retailer is keeping the collabo-

ration project small for now

because of concerns about

opening its mainframe-based

# WEB-BASED SUPPLY CHAINS DRAGGING

Early adopters proceed with caution, cite prerequisites

9V CRAIN STERMAN

Since December, Ace Hardware Corp. has launched supply-chain collaboration projects with four manufacturers,

Supply Chains, page 105 in an effort to cut costs and im-Libration by the state of the s SENSEJFTS SOSSESSOCAR-RT SORTING-652 \$48189,02364798858 OCT 88 863 18251

H H T UNI 00 DOY 904 MM MERCR HE 48186-6964

Supply-Chain prove its ability to fill product Collaboration orders from retail stores that use the Ace name.

What it involves: Groups of printers manufacturers and suppliers using the Internet to exchange business data and to jointly develop demand forecasts. production schedules and inventory replenishment plans

JUST THE FACTS

Potential benefits: Higher sales reduced inventory and production costs. shorter product development and many facturing cycles, improved ability for manufacturers to customize products for different buyers

Challenges for users: Establishing enough trust to share sensitive hyspecs. information among companies, defining common ways of doing business, upgrading internal business applica In support Wish Jurnel collaboration

# 3COM DUMPS ENTERPRISE: **USERS MIFFED**

User companies worry that investments in LAN infrastructure are now at risk

3Com Corp. stunned network users and analysts alike last week with the breadth of a restructuring that will phase out its entire big-enterprise switching business by the end office

The Santa Clara, Calif., company announced that it will discontinue its CoreBuilder LAN switches and all big-iron networking gear, including its PathBuilder and NetBuilder products. 3Com said it will instead focus on more growth-

oriented lines of business Large-scale users said they felt abandoned, and several expressed disbelief that future upgrades will be coming from a vendor they said they had never beard of "This was a big blow to us."

said Brian Wilson, a network engineer at Ohio State Univer sity's Fisher College of Business, which built a showcase network using 3Com's Core-

Builder LAN switches. "We invested all of this me 3Com, page 105

## IBM SCALES LIP LINUX INITIATIVES

But some fear that direction may squeeze other projects

BY DOMINIQUE DECKMYN IBM has revealed further steps in its commitment to Linux parts of which may make AIX users a little uneasy. Last week, the company announced that it's delivering a 256-node Linux cluster to the

University of New Mexico in Albuquerque. While discus sing the deal with Computer world, Dave Turek, IRM's vice president of deep compusing. said it would be the precursor to a puckaged Linux cluster for IBM/Linux, page 16

# NET TAX DEBATE STILL UNRESOLVED

ressional commission

fails to reach agreement

The failure of a commission appointed by Congress to reach an agreement on Interupset foe Dittmar's world of tax applications.

Dittmar is the e-commerce applications manager at clothing retailer Abercrombie & Fitch Co. in Reynoldsburg. Ohio, and stores like his were Internet Tax, page 16

It's not just about creating a captivating webstore on the boulevard of e-commerce.

It's about knowing your customers will do more than just window-shop.

(Order Now)

ep of littles, your sintain out a

With a webstore created and developed by Sontr, your customers are headed for a great brooping expenses. With "work with you every step of the way, providing everything from an order catalog and search capabilities, to transaction Security You'llig et the right design partners, so your webstore looks like your mean business Our industry-leading service looks alignments were guarantee (DNs see availability". And will immetan it all, making sure your business keeps up But it's not just about a webstore should not she related to a constitution of some themse webstore should not she related to a constitution of the webstore that people like is on much, they never lease empty-handed webstore should not should be some should be webstore of the constitution of the should be webstore of the constitution of the constitution of the webstore of the constitution of the constitution of the constitution of the webstore of the constitution of the consti





Skandia's Scott Hewkins uses IT to car



# NFWS

- WIRELESS HYPE gets debunked by a study that finds users won't pay premium fall through prices once the novelty is over
- SUPPLIERS FEEL the pinch from smaller profits. greater competition in
- online marketplaces. MICROSOFT announces new
- Web-based code service. USERS OUTSOURCE to tax skills more than to save money,
- study says. HANDHELDS POSE risk that corporate information
- could fall into the wrong bands, warn analysts. THE WEB SETS sail as cruise lines rush to create
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XML can go only as far as cor-

call for a new kind of IT

manager, one more attuned to business strategies.

#### PSYCHOTIC. JIM HIENSMITH, AUTHOR AND SER SULTANT AT CUTTER CORSORTIUM OR THE CHALLERGE FOR WER PROJECT DIRECTORS TO CREATE THE BIRNT ERVI-ROBMENTS FOR THEIR TEAMS. SEE PAGE B4.

YOU DON'T

WANT THE

GROUP TO BE

COMATOSE.

AND YOU

DON'T WANT

THEM TO BE

#### 37 DAVID MOSCHELLA says legacy systems can play an important role in support the content-tagging language ing today's critical business

- porate IT organizations take it.

   and that's where problems 52 JIM CHAMPY says corpocould begin. rate IT leaders must learn to 38 GEOFFREY JAMES writes be adept at catching each that today's staffine challenges technology wave.
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- 36 DON TAPSCOTT writes that the Internet is suited to become a vast marketplace for

# Loss of White House F-Mails Scrutinized

crutiny by the House Gover sere that lost e-mails cou

#### Baan Loses Another Director

has resigned, making him the third board member this month to give up a seat. Henk van den Broomen, a former general and objet of staff in the Dutch Armed Forces, resigned because of health reasons, Baan said. He had been a member of the releasy board - the European ent of a U.S. -style board of rs - for 12 mer

se weeks after two U.S.-based bers stepped down after nine to on the beard of the Putten.

# fines Public

bines inc. went public last

# **ATDIANINI** Cost, Kludginess of Wireless Web Impeding Adoption

Analysts say consumers doubt advantages

NYONE planning to make a fortune in mobile e-com-

merce - the new-millennium version of last year's dot-com frenzy - needs to think again. according to a hype-busting report from Ovum Inc., a consulting firm based in Wake-

The report discounted consumers' enthusiasm about relentless announcements of oew mobile wireless services and warned wireless warnshes to focus on business users and "genuinely unique" con-

sumer services. Dennis Brown, co-author of the Ovum report, said even business users "won't nay a premium for existing [wireless) services, which are easier and cheaper to access using their phone or PC," Brown stressed that "if suppliers are to survive and prosper in the long term, their early offerings will have to be very targeted and very compelling.

#### Broad Points Ring True

Other analysts, along with wireless Web carriers and application service providers, agreed with some of the broad points in the Oyum report. Referring to wireless bank-

ine. Iain Gillott, an analyst at International Data Corp. in Austin, Texas, said, "Few people want to transfer funds over Sprint PCS today" because of concerns about security and the ease-of-use limitations of existing wireless devices. Gilbert said the industry needs to back up and figure out

how to best serve both busi nesses and consumers with simpler applications. In banking, he said, this could mean 'a ootification service that my checking account balance had dropped to \$100. Then I could go to the ATM and transfer money from my

savings account." fim Rvan, director of applica-

tions and content at Sprint PCS

Technology speeds page download time

Companies looking for ways to speed up cootent distribution and delivery over the Web out more ontions last week

Start-up Fireclick Inc. in Los Altos, Calif., last week launched a service that uses a predictive cacbing technology to reduce the time it takes to download a Web page.

Fireclick's software, called Blueflame, uses real-time clickstream data (a client's usage patterns) and probability analysis to predict which elements of a page - such as a logo or a graphic - are most likely to be next requested by the user. It downloads these elements to the user's however cache one step ahead of the next mouse click, thereby speeding page

delivery at the browser level. Services like these are crucial for improving download agreed that "there's a lot of bype in this space," But, he added, "at Sprint, we don't announce anything until it is real."

According to Ryan, Sprint PCS has already signed up several corporate clients, includine a "substantial" number of users who have hooked their office system into the compamy's wireless Web service. He declined to identify any of

#### those users, however Consumers, Bosinesses Learn

Mike Mills, vice president for business development at Aether Systems Inc. in Owings Mills, Md., also backed the Ovum report, Aether Systems a provider of wireless application services, has developed several business-to-business applications.

"The challenge for business users is to learn about the realities and sift out the bype."

Transportation logistics --essential to e-commerce - is one area ripe for exploitation, since delivery services need, rather than want, the wireless access to data that Aether is pursuing, Mills said.

Management of salespeople - typically mobile workers is another area that Aether intends to address as an application service provider, according to Mills.

As for the hype, Mills, a for mer reporter for The Washington Post, where he covered the telecommunications industry before joining Aether last year, just laughed, "Of course there's hype," he said, "There's hype about anything connected to

# "That report made a lot of Web Content Distribution Gets New Options

sites, said Cheryl Austin, CEO of beta-tester Intermallamerica. com, a Houston-based Web serat browser level vice that bests e-commerc enabled shop fronts for midsize

and small businesses. "It is unique in that it anticipotes pages that an end consumer is likely to request and preloads it to the browser so that it is ready and waiting when the user requests it," she

added. Fireclick is the latest in a growing list of vendors offering similar, though not always identical, content distribution services. Among the more high-profile companies are Akamai Technologies Inc. in Cambridge, Mass., and Digital Island Inc. in San Francisco, both of which boast a large roster of hie-name clients.

Another relatively new entrant is Boston-based Adero Inc., which last week purchased Dedham, Mass-based Starburst Software for an undisclosed amount

Starburst, whose customers include General Motors Corp.

Kmart Corp., provides services that help companies deliver content such as video, audio, business reports, databases graphics and software to distributed devices such as Internet Web servers, kiosks, automated teller machines and television set-top boxes.

Starburst's services will complement Adero's Global-Wise service, which speeds performance by caching static, dynamic and streaming Web media closer to the end user.

#### **Duicker Access Overseas**

"The service allowed for a painless mirroring of our sites overseas, so that international customers have quicker access," said Joe Dunnigan, president of BigDeal.com, an online supplier of winter sports equipment in Phoenix.

Approximately 15% of visitors to the BigDeal site are overseas customers. Since trying Adero's service, response time to such users has improved significantly, Dunnigan

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**Unicenter TNG** 

# It's 'Supplier Beware' Online

They earn less profit, face more competition in digital exchanges



Consider Molecular Probes Inc., which selfs specialty chemicals both directly to research scientists and online via www.Chemdex.com and www. SciOwest.com. Off-line sales net a profit of between 10% and 15% for the Eugene, Ore., supplier. Most online sales, by contrast, bring in just 5% because there's a 5% cut to the

online marketplaces. "There's definitely not as much benefit online from the supplier's side as from the buyer's side. The No. I reason we do it is as a convenience to ers" who want one-stop online shopping, said Molecular Probes product manager

The 'suppliers are getting

squeezed," said Steven Kafka. an analyst at Forrester Research Inc. in Cambridge, Mass. Price erosion, triggered by the effortlessness of compari-

challenge of finding a way to differentiate their products and services from thousands of competitors' listings on the same exchanges are

also big dilemmas It's also not at all clear that a significant number of suppliers' customers are ready or willing to do business coline Firms cur-

rently doing business online report that this form of commerce provides less than 5% of their revenue, according to a recent study by PricewaterhouseCoopers. The users also list the low use of e-commerce by customers as one of the major barriers to electronic

Some of our costomers now don't even want to use the tele-

phone or fax machines. They want a salesperson standing in front of their desk every Monday morning with a box of doughnuts," said David Hanson shopping online, and the nah, president and CEO of Reliance Steel & Alm

minum Co., a \$1.5 biltion Los Angelesbased supplier of metal products. Yet Reliance sells its products online at www.Moteriolnet. com which Hannah describes as "another tool and an exten-

sion of our sales force." There's also the expensive and highly complex task of integrating suppliers' enterprise systems with those of the multiple exchanges cropping up in virtually every industry. In the past six months, for

example, more than a dozen new exchanges have appeared in the oil industry. And the printing industry is up to more than 20 online marketplaces. Until a clear winner emerges in their particular industries. suppliers are more or less forced to sign on to several or all of them, analysts said. "If a company is a supplier to

Kmart, Target and Wal-Mart, it's likely (it will) need to be on several exchanges, and it takes time and resources to post [electronic] catalogs to different sites plus integrate backend systems," said Gene Alvarez, an analyst at Meta Group Inc. in Stamford, Conn. "The announcements make things sound so simple, but it's not simple. There's a lot of

things under the covers," Alvarez said No Automatic Rewards It's also a mistake for suppli-

ers to assume that simply participating in a digital marketplace will automatically open up new markets and bring new customers, said David Krautharmor dispersor of information technology at Advanced Fibre Communications Inc., a maker of telecommunications equipment in Petaluma, Calif. For example, in the manufac-

turing arena, the vast majority of business-to-business buying

tom-engineered to rigid specifications and sourced from one or two prequalified suppliers. Krauthamer said.

**Big Suppliers Rule** 

'If you are a Ford or a GM. you are not quickly going to start buying from a small company" just because it's listed in a digital marketplace, said Andy Chatha, president of ARC Advisory Group Inc., a consultancy in Dedham, Mass. "Support is very very important. [So] such companies are going to continue buying [critical components] from big suppliers," be said.

Despite this, there is a crucial need to maintain a presence in these exchanges if only for the wider marketing visibility they promise, said Andy Andrews, an export sales manager at Paratherm Corp., a Cooshohocken, Pa-based manufacturer of specialty heat-transfor fluids

Andrews doesn't see much value in compromising margins - and risking commoditizing his products - by participating in online suctions just to attract new customers. The goal of participating in these exchanges is to deliver

more information and make potential buyers "realize that these are (differentiated) ensineered products" requiring postsales support, said Andrews. The only way to maintain margins in these ex changes is "to try to promote a dialogue rather than simply attract new customers," he said.



#### Smaller Players May Benefit the Most

ries on the seler side of the digital exchanges seem to be small and medium-size suppliers. Kevin Campbell, press

Master Design and Menufactur Inc., a \$5 million custom metal labrication company in Nobles-80 000-sa -ft plant pungen at full capacity.

He has also nearly halv on costs by per a 4% fee to the exchange vs. a 7.5% commission to a traditional

you're paying salary and en pernes, especially the way hotel prices and gas prices are escalat ing and airline tickets are going \* Campbell said "So the fact that I can sit at a

computer for \$19.95 [per] month and quote milions of dollars worth of work I find pretty exciting," he said. "You could have a staff of 500 salespeople, but there's no way they could cover the whole

country and Canada." But bidding the right pr online - as in the real woold - "is still really kind of a crapshoot," Campbell said. "You hope you can

do it for what you say you can do it for." - Julie King

# New Tools May Make E-Life Easier

rs operate more efficiently at mine exchanges are beginning to noise into the market.

ed, Calif., has announced that enables suppliers to calculate their costs and profit in real time while simultaneously be ng at online exchanges. The are identifies which conacts are polentially the most

Uters of the software, which takes four weeks to install and is priced at 196 of a plant's revenue over three years, include Schaumburg, III.-based Motorola Inc., Chicago-based Nopon Steel U.S.A. Inc. and Tolerlo, Oho-

so on the sales side, No ork-based interWorld Corp. is sking aim at the differentiation

ecific branding and grometional data - to several different exchanges, such as Walnut Creek. Calif.-based Commerce One Inc.'s

Delray Beach, Fiz.-based Wig net inc.'s business to business site puts suppliers' full catalogs online, enabling buyers to search millions of products, ranging from adhesives to telecomm unications systems, by dozens of paramete David Yockelson, an analyst at

Arta Group Inc. to Stamford Conn., said suppliers can expect more such products in the coming months. "We'll start to san tools made available to suppliers so they can get real-time analytics about what's happening in a Net market and how that relates to what's going on with their own Yockelsen seid

Whout them, companies whose products are compared online by price alone "are going t lose more and more margin," he rs will were up about that " - Jula Kino

# 88% of the USA TODAY e-Consumer 50 run Oracle.

They know that
e-business is not as easy
as just putting an e in
front of everything.



# Petrochemical

# B-to-B Marketolace

called Envera. By the third quarter. trading members will be able to buy and sell products and will have ac-

#### Online Marketolace Recruits Members

Corp. is setting up with Sears, Rosbuck and Co. and Paris-based Carour SA. The new participants are ul sales of \$42 billion, and insbury PLC, a London-based ny that owns Shaw's Sup forts Inc. in the U.S.

#### More Women Are Logging On to the Web

ing numbers and are driving the growth of Internet use in the U.S. By the end of last year, 106 on people - 53% percent of the U.S. adult population - were enline and 80% of those people accessed

Washington, Internet use has grow by 20% since 1998. The number of women using the Web has tripled in the past two and a half years, and 49% of all Web users today are women, acco

# Congress Fights Sparn

rs from sending more

# Image Server Helps Ford Manage Media Assets

Converts logos, photos for the Web or print

TLANTA-BASED IV. erated Systems Inc. will announce this week that its new graphics image server is in use at Ford Motor Co. in Dearborn, Mich. Available next month, Iterated System's MediaBin 1.0 image server stores and retriever

digital images, and converts the images into different formats and resolutions for use on the Web or in print. MediaBin supports a variety of image formats, including Tag Image File Format, graphics interchange format, JPEG and Adobe Photoshop files. It requires Microsoft Corp.'s Windows NT Server and SQL Server. Iterated Systems executives said the image server will help

customers with large media as-

sets, such as Ford, speed up the

production and distribution of

BY LEE COPELAND

Finding components to quickly

build an application developed

in Visual Basic may now be a

bit easier with Microsoft

Corp.'s launch last week of a

Microsoft's Code Librarian

Update service offers free code

components for functions such

as launching routines to open

Windows applications from

The service, available via the

Web at www.msdn.microsoft.

com and updated monthly, is

for use in the development of

Microsoft Office and Visual

The service lets developers

search for and download pre-

written code samples from Mi-

crosoft applications, such as

Excel and Word, and from ap-

Web-based code service

different interfaces

Basic applications.

Analyst: Service convenient, but finding

right snippets of code may prove difficult

ments and to its dealerships via a corporate intranet One-Stop Shop What we want to do is es-

tablish a one-stop shop site for all brand image assets," said Gloria Gomah, a senior graphics specialist at Ford. "It belos our people internally to manage their efforts more efficiently and to track down where to get the image." Gomah said. "Right now, it may take two or three calls to find art. We're streamlining the process so that they can go to one site and get what they need." Asset management software

plications from Microsoft's in-

ner Group Inc. in Stamford

Coen, said Microsoft's code

offering is on par with the de-

veloper portals of rivals IBM

"A lot of developers learn by

studying source code," said

Driver. "What works best is to

incorporate discrete code ele-

ments into a large theme,

which is much better than giv-

ing the entire application. Why

throw a Bible at them when

Analyst Rob Enderle at Giga

Information Group Inc. in

Cambridge, Mass, said devel-

opers accustomed to down-

loading tools from the Web

could find the component of-

fering convenient, but added

they only need a verse?

and Sun Microsystems Inc.

Analyst Mark Driver at Gart-

dependent software vendors.

visual images on Web sites.

The automaker will use the

MediaBin server to store digi-

tal logos and photographic im-

ages for its 13 vehicle lines.

JUST THE FACTS Ford Motor Co. New image server plans:

· Create ceretral repository for all emopr

Ford will make this content acships access to media content we an cessible to its marketing and Web development departrivals such as San Francisco-

based Canto Software Inc. and Atlanta-based The Software Construction Co. (SCC) offer similar features for storing and resizing original content. Focused on the publishing sector, SCC's MediaServer stores images as JPEG files but

doesn't enable automated conversion to other formats. Canto's Cumulus media management tool only offers automated format conversion for JPEG files. Canto partners with Iterated Systems to provide a the ability to convert im-

Prospective Iterated Sysnine said 9

staff manager of photography at a major U.S. airline, said MediaBin is distinctive because it converts images to different formats and sizes on the fly.

#### For example, with MediaBin

it's possible to store an image in one format in a database then later render it as a lowerresolution thumbnail for a Web site or as higher-resolution photograph for a print catalog Companies with extensive media assets need format-neutral ways to manage images, said Tony Henning, an analyst at Future Image Inc., a digital imaging market research firm in San Maten, Calif.

'Images are not just created for the Web. If a photo is of high quality for a print catalog. MediaBin can format it and make it appropriate for publishing on the Web by serving it up in a different way," Hen-

# Microsoft Offers Free Components via Web

that finding the right code snippet oo the fly presents a The difficulty with small, discrete components is know-

ing when you need one and how to get to the one you need You can't spend the first two hours of the day looking for things that may or may not be there," said Enderie. Enderle suggested that Mi-

crosoft look to add other services targeted more specifically to users' needs. Microsoft estimates that its application development tools have more than 2.6 million users.

while longer to get a hold of the technology that I want to added a

Visual Basic developer Rodney Bergren, technology coordinator at Des Moines Area Community College in Ankeny, Iowa, has downloaded code components from the Web to build applications but said he doesn't anticipate using the

new service

"We write a lot of in-bouse applications, and we usually have to pay to download [the code), so we don't do it," said Bergren. "It may be a way to get around delays in gaining access to Visual Studio. It's frustrating to wait a

play with tomorrow," Bergren

## Code Libraries

Visual Basic, Java, C/C++, Palm OS Unix, Linux, VB software, games

Java and COM components

# Electronic Banks With Targeted Marketing Tops in Survey

Comerica Inc. in Detroit and American Express Co. in New York scored highest in a survey rating 41 online banking sites on their levels of interactivity. The study, conducted by Atlanta-based Speer & Associates Inc., also found that banks

with both a virtual and physical presence do a better job of serving their customers on the Internet than those that are online only

merica and American Everess are conducting targeted online marketing with their customers. Meanwhile, the majority of the other institutions in the survey have Web sites with lower functionality that merely allow users to make inquiries and transactions.

But even Comerica and American Express fell short of the standards set by other industries, which integrate external marketing data with internal customer database knowledge and Web site usage information, according to study author George Albright, chairman of Speer & Associates.

"Without better use of the interactive marketing capabilities enabled by the Internet. financial institutions are missing the principal opportunity presented by the Web," said Albright, in a statement. "As this occurs, sales opportunities will be squandered. But more importantly, customer relationships will be lost to more aggressive firms with highly developed Internet marketing capabilities."

He added that leading Internet firms in other industries improve their Web sites as often as once a month

The financial services industry cannot keep pace with customer expectations or evploit marketing opportunities on the Web by maintaining traditional development timetables and marketing information system priorities," Albright said. "Transactional services are not the endeame."

#### Playing Catch-up

Banking has been slower to move online than other industries and slower than other types of financial institutions said Mark Macklin, an analyst at Cambridge, Mass-based Forrester Research Inc.

banking," he said. "The culture | but they don't necessarily know

internally remains the same. how to implement the Net." You still have people making In comparison, he said, San

Charles Schwab & Co. updates its Web site at least once per

American Express prides itself on updating its Web site frequently. Desiree Fish, a spokeswoman for American Express. noted, "We're constantly im-

proving it." )

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# NEWS

# Survey: Skills Shortage Spurs Outsourcing

Companies that look to outsource may be more interested

the results of a new survey

than cutting costs, according to | with at least 7,000 employees decided to outsource because U.K. firm Xephon PLC found they either didn't have the in procuring the right skills that 43 out of 90 companies right skills in-house or they

on more strategic projects. That was certainly the case for the firm that manages Comfort and Quality Inns in 27

wanted internal staff to work ity Corp. in Silver Spring, Md. said the main advantage of selecting USinternetworking Inc. to host and manage PeopleSoft financials was to have a team of states. Chuck Warczak, a vice dedicated PeopleSoft experts at president at Sunburst Hospitalhis disposal.

Prior experience with a PropleSoft implementation which took more than two years and cost almost double the original estimates - at Choice Hotels, his former parent company, made Warczak less than optimistic about Sunburst's ability to hire the right people for the job. After Choice Hotels went live with People-Soft, a competitor lured away the firm's in-house experts.

\*Beyond implementation, I don't think we can provide the kind of challenging environment" to retain PeopleSoft specialists, said Warczak.

In fact, some compar that outsourcing can help retain existing employees. Many companies select an applica tion service provider to handle more mundane tasks so their internal information technology staff can handle more lex projects, said Mered ith Whalen, an analyst at Framinches Mess Josef Interna

tional Data Corp "You have to provide intangibles like cutting-edge proj ects [to] retain IT personnel," eaid Whalen In spite of having a dedicat-

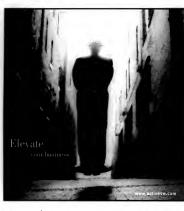
ed in-house IT staff, even large companies are chasing certain sought-after skills, such as experience with e-commerce projects, said Xenhon research director Mark Lillycrop

He said the types of e-commerce experience companies cherish most include Web development, Java programming and understanding how to connect the Web to back-end legacy systems. "There's a house demand for those type of skills [that have] grown up separate from the internal data center world" Lillycrop said.

Selecting an application service provider has some financial benefits as well. Though a firm might spend \$1 million in monthly fees over a three-year period to rent software, the money is spent over time rather than doled out in a lump sum to buy equipment, said Whalen.



such as articles multicutions and begins



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# Compaq Starts \$1B Fund

Will invest in, loan money to service providers as outsourcing interest grows

THE GROWING COFporate interest in renting applicastructure services over the Internet is driving the development of closer relationships between hardware vendors and service providers. Lest week Compac Computer Corp. became the latest

vendor to announce a wide-

range financial program tar-

rented applications, systems providers.

management services, bardware storage and network bandwidth over the Internet. Under the program, Compaq will commit more than \$1 billion to the service provider market this year. Of that amount \$600 million will be loaned to start-ups and

Julian Chu, a retail consultant

at Mainspring Communica-

tions Inc. in Cambridge, Mass.

"By that time, we were already

saying you should go to a click-

and-mortar strategy," rather

than spin off a separate site

For business-to-consumer

operations, "it's starting to

look like, in most cases, it's

established companies for equipment, storage, software and related purchases. About \$400 million is being earmarked for equity investments setted at companies that sell and partnerships with service

#### **Vendor Investments**

Top platform revenue growth in the service provider market for quarters ending March 32:



Calif

Compag's move comes as interest in outsourcing key information technology functions and technologies to service

better to stick with your brand name and make the e-commerce part of it," said Keitb Warvas, an analyst at Framineham Mass-based Internation al Data Corp. "You're going to have to integrate the online with the brick-and-mortar, because the customer sees it as

one business. CompUSA last week also ounced the retirement of CEO James Halpin. He will be replaced by Chief Operating Officer Harold Compton.

providers is on an upswing. For instance, more than one-third of FF and development managers at large conporations expect to rent applications from application service providers this year, according to a survey conducted last December by Evans Marketing Services in Santa Cruz.

The strongest support for renting came from the professional services sector which includes the insurance, legal services and real estate mar "The fact of the matter is that service providers are hot," said Joyce Tompsett-Becknell, an analyst at Aberdoen Group

or voice mail access codes. But

Robinson noted that encryp-

tion programs often require

long passwords, and many

wireless applications limit the

amount of time a user can

spend entering this data -

ironically to though crackers

who may be fishing for pass-

Another drawback to en-

crypted data is that users can

**Password Difficulties** 

Inc., a consultancy in Boston. "As their infrastructure demands grow, they are going to need more servers" than are found at even some of the biggest corporate customers. she added.

#### Broader Market

Compaq is hardly alone in its efforts to team up with Internet companies. Rivals such as Sun Microsystems Inc., IBM and Hewlett, Packard Co. all offer similar programs for dotcom start-ups and Internet hosting companies.

But Compaq's offering is broader in the sense that it targets not only application service providers and Internet providers but also network and infrastructure providers, said Thomas Kucharvy, president of Summit Strategies Inc., a Boston-based consultancy "Equity investments have

become absolutely de rigueur' for vendors selling in the service provider space, Kucharvy Conversely, having an equity partnership with an estab-

lished vendor gives Internet companies that haven't had initial public offerings added credibility, Kucharvy noted. "Secondly, they want the vendor they are buying from to have some skin in the game to really have something tied

to their ultimate gain," Kucharvy added.

# Handhelds, Wireless LANs Raise Security Flag

EY ANN HARRISON AND MATTHEW HAMBLEN

Companies were warned but week that corporate information on handhelds could fall into the wrone hands, but windess LANs remain a bigger At a conference here on mo-

cess sponsored by Stamford. Conn.-based Gartner Group Inc., analysts scrutinized security issues that handheld users should consider name! instead of trying to de-The greatest risks surround

ing handhelds are that they can be easily lost or stolen. But Gartner analyst Phil Redman said that the wireless devices' best defense is that they are nomadic and not constantly

connected to the corporate

network. This fact makes it difficult for interlopers working in the area to locate a specific sages from the stream on a spectrum band.

Alex Robinson at Martle Valley, Wash-based Tranzon Co. producer of the OnlyMe access control program for Palm Inc.'s bile and remote network ac-Palm devices, said that encrypting data with a pass phrase of a half-dozen words makes the data secure, al-

tion Standard to store data

though it's cumbersome to input it on a handheld unit Account and password management programs, such as Clifton, N.I.-based Zetetic Enterprises' Secure Tool for Recalling Important Passwords.

lose data forever by forgetting a password. Encrypted programs generally expand the data, he said, but the old version of the Palm deskton truncated memos to 4KB. \*Encrypted memos were longer use 128-bit Triple Data Encrypthan 4K," said Robinson, "Now I have several permanently such as credit-card numbers, encrypted memos."

Bob Egan, the security worry is higher when companies use wireless LANs. In theory, a well-equipped corporate spy could position himself near corporate headquarters and tap the stream of wireless data While stories about research laboratories conducting strip searches for personal digital assistants or barring scientists from using such devices circulated at the conference. users were encouraged to consider practical defensive techniques 8

According to Gartner analyst

CompUSA Shuts Cozone.com

Moves e-commerce to eponymous site

BY DEWAYNE LEHMAN CompUSA Inc.'s decision last week to abandon its e-commerce-specific Web site supports the argument that businesses need to merge their online and brick-and-mortar entities, analysts said.

The Dallas-based computer retailer closed the Cozone.com site it established in October and moved the online value operations to its primary Web site at www.compusa.com.

The company said the change was part of its new e-commerce strategy to integrate online and in-store sales and services. However, a company spokeswoman acknowledeed that CompUSA shut down Cozone.com because the separate e-commerce site had poor sales during the holiday shopping season and never caught on with consumers. We just felt it was better to build on [CompUSA's brand

velop a separate site," said spokeswoman Suzanne Shelton. The move came as no surprise to some observers familiar with online sales. "I was a little surprised they

even launched Cozone," said



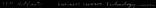
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# Cruise Lines Launch Internet-At-Sea Access

Internet cafés boost revenue, help meet

THE CRUISE INDUStry has started a mad scramble to connect its ships to the Internet to compete with resort hotels that already wire their landhased exests

Most U.S.-based ships, which boarded 4 million passengers from Florida alone last year, are expected to provide satellite connectivity to the Internet by the end of the year. That's just 17 months since Norwegian Cruise Line Ltd.'s (NCL) Norwesian Sky set sail with the first seaborne Inter-

net café last August. The companies have discovered that Internet access has become a competitive necessity, not only in a marketine battle with other cruise lines, but also with high-end resort hotels, where the available service to check e-mail is a given.

#### Rippling Impact

The demand for Web access at sea shows the influence of the Internet on our lives," said Perry Sandherg, director of new build solutions at Royal Caribbean Lines Ltd. in Miami. Sandberg, who spearheads Royal Caribbean's Internet-at-sea efforts, said the mpany has Internet cafés on II ships and has started deploying the Net on five more and will install cafés on another five ships by the end of the lim Lazazzera, vice presi-

dent of information services at Premier Cruise Lines in Port Canaveral, Fla., said, "We market to kids. They want to use computers. In fact, the kids research the cruises over the Internet." Premier plans to complete Internet café installations oo its Big Red Bout fleet of four ships well before year's end.

Cruise passengers "don't want to be too far from what's going on in the world," according to Armando Martinez. director of onboard revenue at Miami-based NCL, which plans to outfit its nine-ship fleet for online access before next year. He said the ability to access stock market prices via the Web ranked just behind e-mail as the most-used ser-

#### vices on NCL ships. Unlimited Revenue Potential

core effects resonant with NCI charging up to \$45 per bour. Glenn Farrington, CEO of Digital Seas International Inc. in New York, said the revenue streams from Internet-at-sea access don't end with the connectioo charges. "We use flat-panel monitors from Denmark, and if someone likes

unlimited." Digital Seas designed and installed the Internet cafés for both NCL and Premier, and also has contracts with Seattle-based Holland-America Lines, Miami-based Carnival Cruise Lines Inc. and Fort

it, they can buy it. ... The e-commerce possibilities are Lauderdale, Fla.-based Renaissance Cruises Inc.



INTERNET ACCESS ON CRUISE SHIPS, such as that offered in Norw gian Cruise Line's Sky Internet Café (above), is said to have boundless

The cruise lines' Internet | links don't incur much in additional costs, because they already use broadband satellite services to manage inventories, run credit cards and tie shipboard office and engineering systems to shore-based offices, according to Brad Wiggins, president of Maritime Telecommunications Network Inc. in Miami. Maritime pro-vides satellite services for Dig-

ital Seas and its customers. The Internet-at-sea battl won't end with just public-

access cafés. All the major cruise lines are installing shipwide fiber-optic networks on their new builds to provide in-room access. But don't export any bargains, because the cruise lines have said they intend to charge the same high rates for in-room access as café access.

#### The AOL of The Oceans?

Germ Farrington, CEO of pri-untrily held Digital Wireless ational Inc., hoose his of the oceans," serving remote users not only on cruse ships, but also on large, overnight

and oil dos

Famington futched the ide for Sunne, Ra.-based Digital Online Inc. four years ago. He was on a cruise, and said he it fourtrained that he couldn't check the price of the company's voietile stock, sense

opportunity, resigned his post at AOL and started Digital Secs. Life AOL, Digital Seas uses a proprietary "controlled envi-ronment," Borrowing a lesson m another Web ploneer azon.com Inc., Digital Sees

has filed for intellectual prop-Once Digital Seas lives up to its motto, "The earth is mostly

er . . . somebody has to wire st," Farrington said. The compepassengers who went to use etr Palm VII handhelds while The company's trolling for

customers runs deep. "We have received inquiries from the crews of tune boots operat mg off the Felkland blands

Famington said.

# Open Market Expands E-Commerce Software Suite

Integrated engine to help companies manage Web sites

Open Mariot Inc. today will announce an expanded e-combeef up business managers' control over catalog creation

tegrated application suite that includes new releases of two core products: Cooteot Server 3 (formerly Internet Publishmerce application suite to ing System) and Transact 5 (for processing orders). and management and help them personalize online

"The fact that the transaction and content engines are integrated out of the box is im-

marketing efforts.

portant," said Mitch Kramer. an analyst at Boston-based Patricia Seybold Group. "It's become a requirement in serious e-commerce sites. It speeds implementation time." Opeo Market's suite will also feature four new product mod-

The Burlington, Mass-based ules: Marketing Studio, Catasoftware maker, one of the first log Centre, Personalization Centre and Syndication Centre. vendors of e-commerce transaction engines, will offer an in-"It used to be enough to aggregate content and put it in a catalog and display it," said Randy Covill, an analyst

at AMR Research Inc. in Boston. "The bar has been raised now. People are looking for ways to display the same content differently to different

Covill said integrated suites of products can help free companies of the technology burdeo so they can concentrate on their business mod

Open Market's Content Server, which will support BEA Systems Inc.'s WebLoric and Sun/Netscape Alliance's iPlanet application servers, will be available by month's end at a starting price of \$50,000. Transact, which features a more flexible shopping cart and oew and enhanced applicatioo programming interfaces, is also expected by mooth's end. Pricing starts at \$125,000.

Additional modules will roll out through June.

# NHEN YOUR SERVER CAN PREDICT THE FUTURE IT'S MACIO

er X g or r or r s er or r s er

No.

IBM





potentially link to state tax sys-

tomated-compliance tax ex-

pert at PricewaterhouseCoop-

ers in New York, said she be-

lieves companies will move to

tax transaction servers to sim-

plify processes. But she said

she also sees greater interac-

tion between corporate tax and

information technology de-

Jennifer von Drechsel, an au-

# ovell Clusters 32

Novell Inc. last week shipped an us date to NetWare Chaster Services, ng support for NotWare 5.1 and for 32 nades. The update costs \$4,999 per node. More than 80 vendors will demonstrate directoryations at Brainsh in Selt Lake City this week.

# Seagate Storage Boost

Technologists at Sougate Techno Inc. in Scotts Volley, Calif., anced that they now can store 45 llion bits of data in a square inch of space on a storage device, the high-est amount so far. Seagate and ISM are racing to increase storage density, but Sangate beasted that its lat-est innovation doubles its previous density record and in the third world

#### rd it has bit in a year. ata Sticks to Tane

sts from the European Media sary (EML) in Heidelberg, Ger-8 of data can be stored on a roll on of Hamburg, Gerny-based Beersderf AC's Tesa. ti-Film. EML worked with the in-ste of Computer Science at the enhaim in Germa

# winkie Crisis Online

ntil a Teamsters strike ended la Until a Teamstern strike ended last wook, internet section site office wook, internet section site of foring to self Twinties, which weren't being delivered due to the strike. A few saw offers in the range of \$1 or \$2 per box, and one offer ing received 11 bids, with the top price going as high as \$5,150.

## Short Takes

The WHITE HOUSE's \$50 mills mitoring center will close for ed March 31. . . SAP AG has anunced it's forming SAPMarks ov subsidiary dedicated to its SAP.com applications. . . . RTNER GROUP INC. in Stan

n., paid \$80 million to acquire HREPURLIC INC. in Leutuville. an online community for infe dien technology professionals. PITNEY BOWES INC. in Stam land, Conn., has named Gregor ari to its top IT need

#### Continued from page I Internet Tax

at the center of the debate over Internet taxation last week Unlike pure dot-com comeanies. Abercrombie's 250 stores give the company a national physical presence, meaning the retailer must change its online customers sales taxes in most states Distmar's job includes managing the tax soft-

water "If they removed our need to collect taxes, that would just sare us money because we would stop renewing our Itax software] maintenance and licensing agreements. But it wouldn't be like we would have to lay someone off." Dirt-

mar said. Collecting taxes isn't very complex, he added. The real problem concerns competition. Big retailers such

as Wal-Mart Stores Inc. in Bentonville, Ark, urged the Advisory Commission on Electronic Commerce to adopt a proposal that "leveled the playing field" by imposing an equal obligation on all Internet sell-

ers to collect taxes. The commission came close to reaching agreements but fell two votes short of the required reporthinds - or 13 of 10 voter - for any of its proposals to become recommendations to

Congress. "I don't believe what senarates us are special interests." said AT&T Corp. Chairman Michael Armstrong, "I think what we have really run into is

the issue of time." Time is short for the commission, which began meeting in June of last year. A final report to Congress is due next month.

#### The Debate Continues More companies could be gin to follow Wal-Mart's exam-

ple and turn their online businesses into separate subsidiaries. By doing so, Wal-Mart is able to avoid collecting sales taxes from its online customers, except those who live in California. Utah or Arkansas

"We're going to compete on the Internet," said David Bullington, a Wal-Mort vice president

Retailer J. C. Penney Co. is considering a similar move.

has to think about that," said | disagreement among the busi-

retailer But the tax implications are muddy. Wal-Mart, for instance. lets online customers return merchandise to lo-

cal stores, a practice that many experts say increases a company's tax obliga-

The six business members on the commission sought uniform ware International Inc. in nexus or physical presence Salem, Mass., uses Internet rules to settle these issues. But protocols to manage taxes and

Wayne Zakrzewski, a tax man-ager at the Plano, Texas-based from state governments over nexus crippled the talks. Key to any Inter-

net tax collection clan is the simplification of tax laws A number of states intend to push for that while also investigating technological solutions.

One product, a transaction server developed by Tax-

partments, as enterprise resource planning systems automate tax functions. A key problem is getting tax and IT professionals to understand one nnother. "They are almost talking different lan guages," you Drechsel said.

tems



is the big issue for

Continued from page I

commercial customers later this war IBM's Global Services division has already rolled out Linux clusters at several unnamed commercial customers' sites. said Turek. The systems will contain clustering technology ported from the RS/6000 SP platform and will run a range of applications. Those will in-

clude databases, data warehouses and electronic-business applications. During the past two years. IBM has made a series of Linux-related appouncements including supporting Linux on all its servers and porting virtually all its applications and middleware to the operating

Several vendors, including TurboLinux Inc. in Sun Francisco, are already offering clustering software for Linux, and Silicon Graphics Inc. in Mountain View, Calif., recently an-

nounced a cluster offering that is mainly aimed at technical markets Some analysts said they

wondered where IBM's in creasing focus on Linux would leave Project Monterey, the joint attempt by IBM and The Santa Cruz Operation Inc. (SCO) in Santa Cruz, Calif. to develop a common Unix version for Intel Corp.'s upcoming 64-bit processors, called Mon-

"I've seen signs that Monterey is not necessarily a longterm initiative for IBM," said "Anybody in our business Stacey Quandt, an analyst at dent and research director at

Gigs Information Group Inc. in Cambridge, Mass. IBM's Miles Barel, program director for Unix marketing. disputes that, But Monterey

will be able to run many Linux binaries, and Monterey applications will be easily moved to Linux. To make this migration easter, Turek said, IBM will port some features that are part of the AIX kernel and offer them as layered products

my But it could backfire

lams, an analyst at D. H. Brown

Associates Inc. in Port Chester.

One RS/6000 user said he

saw no contradiction in IRM's

simultaneous support of AIX/

Monterey and Linux. "It en-

courages me," said Jay Chavez,

vice president of worldwide

Internet services at Ursus

Telecom Corp. in Sunrise, Fla.

"It means that they're not try-

ing to lock me into one plat-

But if IBM continues to pros-

clytize about Linux, "then I

about adopting Monterey."

said George Weiss, vice presi-

on top of Linux. "If Linux becomes the platform you want to be on five - Continue our \$154 years from now, moving there

from Monterey is going to be very, very easy," said Barel. Strategy May Backfire

Barel said he hopes that this charters from HIM strategy will give Monterey an

edge over Solaris because of Gartner Group Inc. in Stamford, Conn. Sun Microsystems Inc.'s more reserved position toward Lin-Iams said IBM's support will be key to Linux. "If Linux is go-Sun and HP will pounce on ing to move into the big time, any whiff that IBM might be it's going to be with guys like abandoning AIX," said Tony IBM," he said. "It takes profound commitments and big

bucks from major players." However, Bob Venable, man ager of enterprise systems at Blue Cross/Blue Shield of Tennessee in Chattanooga, said he doesn't believe that Linux will soon be able to support large systems like his Oracle database, which runs on a 12processor RS/6000 System 80. But an IBM Linux offering, coupled with IBM services. could still be an attractive platform, he said.

#### would be led to believe that users should be very careful MOREONLINE

#### AT A BLANCE IBM's Netfinity Linux Cluster "Los Lobos" Linux cluster IBM

delivered to the University of New Mexico is built from 256 Netfinity servers with two 733-MHz processors connected by a switch from Myricom Inc. According to IBM, it will ■ Perform 3758 calculations per second

■ Se the 24th most powerful supercomputer · Be the precursor to commercial Linux

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on extranets and websites, as well as their supporting enterprise-wide assets — all need to be secured. Protecting the integrity and

availability of intranet information is critical to all organiza-

tors.

Administration

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Web-enabled
business applications open up

all of your back-end and legacy
systems to the

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\*\*Toronal Company

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world.
Unfortunately,
in the race to
become Webenabled, secu-

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a back seat. IT m

aselves a false se

rify has taken a back seat. If managers often give themselves a false sense of security with a standatione or partial security solution. They forget that security is only as strong as its weakest link and that eCompanies need an integrated and comprehensive security solution that provides best-of-breed functionality.



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# Companies Aren't Rushing to Conduct Business Online

Study: Only 40% of large businesses are able to receive orders online

OR ALL THE HYPE surrounding e-commerce and digital marketplaces, a new study indicates that corporate industrial clants are lumbering, rather than sprinting, their way to the brave new

world of Internet business. While most have corporate Web sites listing their products and services, only 40% of large ponies can receive orders online. And even fewer - 28%

of companies - can accept electronic payments. Perhaps most noteworthy is

that one out of four companies have yet to take any significant action on the electronic-business front, even though they consider it important according to a survey of senior executives at 78 industrial companies conducted by PricewaterhouseCoopers in New York.

These are big companies

that have a lot at stake with

their brands, relationships

customer reactions. They are being cautious about how they deal with this," said Ed Berryman, author of the PricewaterhouseCoopers study

"Many of them are looking for examples of firms that are more like they are, rather than just dot-coms," Berryman said. At the same time, Berryman said, companies are making preparations internally for an eventual buse lean into e-com-

merce and, potentially, an even bigger game of catch-up. For example, 79% of respondents said e-commerce provides less than 5% of revenue. But they said they expect that

20% by 2003.

many industrial companies.

Another key indicator of companies' great electronicbusiness expectations is the widespread creation of full e-commerce teams, which are replacing part-time task forces and information the current figure of about 7%.

technology project teams at Milwaukee-based Brady Corp., which makes industrial labels and signs, is a prime example. Since last August, the company has appointed four full-time electronic-business directors, implemented an Internet-based extranet ordering system for its U.S. distributors Stuck Online Too barriers to e-commerce. · Implementation costs are high or

# Other property are more varient

 Lack of proven benefits Standards not established · Low use of e-converce by custome

and set a corporate goal of doing 50% of all business online by 2003 - a big increase over

said Steve Hasbrook, corporate e-commerce director "We pulled e-business out of IT, and now, all e-business resources report to vice presidents of the business groups," Hasbrook said. "We see it as a very strategic business initiative. Things are moving very fast," he added.

# Brainshare: Novell Faces Up To Windows 2000 and Linux

Active Directory coexistence is key

The NetWare faithful will gather in Salt Lake City this week for a critical Brainshare user conference. Novell Inc. needs to prove its core Novell Directory Services (NDS) technology can coexist with Microsoft Corp's Active Directory and that Novell can ofell has trouble." fer services on top of NDS that guarantee future growth.

In February, the company formulated this growth strategy by repositioning itself as a provider of "Net Services" platform-independent, directory-enabled offerings for Internet intranet and extranet

environments It also announced iChain, a Net Service that will use NDS as a platform for electronic business, and two new systems management tools, ZENworks for Networks and ZENworks for Servers. Also, the cor shipped versions of its NDS eDirectory, the latest release of NDS, that run on Windows 2000 and Linux.

Rocco Esposito, information technology director at window-shade maker Hunter Douelas Inc. in Broomfield Colo said NDS is what makes him stick with Novell. "I want to have a single directory with single sign-on," said Esposito. "I'd like to see everything directory-enabled." But while Esposito prefers NDS he said he fears that "if third-party developers start to develop to Active Directory natively, Nov-

A Computerworld survey indicates that Active Directory will coexist with NDS in the majority of NetWare sites. Neil MacDonald, vice president and research director at Gartner Group Inc. in Stamford. Conn., said NDS users will have little choice, since applications like Exchange 2000 will require Active Directory.

"They need to demonstrate that they are going to coexist with Active Directory," said Lee Roth, LAN and security services manager at Southwest Airlines Co. in Dallas. Southwest is building a security infrastructure on top of NDS and intends to use NDS as the focal point for a range of new appli-

#### Doomed to Coexist Which one of the following best describes your prognization's strategy for directory software?



 NDS primarily, coexisting with Active Directory ■ NDS and Active Directory coexisting equally

Doo't know III Moving from NDS to Active Directory or renlacing NDS with

Active Directory Active Directory primar ily, coexisting with NDS

# Active Directory only ■ NDS only "Note Percentages equal 15% due to rounding Base 75 companies

cations. But like most Net Ware sites, Southwest is using Windows NT for application servers and is looking at Windows 2000. 9

# E-Customers **Not Satisfied**

Businesses on the Web will have to increase their commitment to online service to overcome the high dissatisfaction amone customers who contact them electronically, according to analysts.

A survey of 10,000 Internet customers found that only 36% are satisfied with their online interactions and that more than half of the transactions require a phone call or other offline interaction to resolve

The study, conducted by e-Satisfy.com in Arlington, Va., for the International Custo Service Association in Chicago, also showed that online customers generally have higher service expectations. For example, the online

shoppers surveyed said they expect acknowledgement of any contact they make within an hour, but only 42% said they get it within 24 hours. And nearly 40% of the respondents said they never get a final response to attempts to contact a

company via the Internet. The survey's findings are in sharp contrast to previous studies that indicated that Web sinesses generally have met

online shoppers' expectations. The contrast is attributable to the different approaches taken by dot-com companies and traditional businesses that go to the Web, said Laurie Windham, CEO of Cognitiative Inc., a consulting firm in

San Francisco "Up to now, the Red Sea has parted between the dot-coms and the traditional brick-andmortar businesses. I'm not sure if Ford, [Hewlett-Packard] or American Express are get

ting it yet," she said. The survey questioned cus tomers of 16 businesses about the electronic interactions that they conducted.

The husinesses with Web sites studied in the survey included American Express Co., Ford Motor Credit Co., Hewlett-Packard Co., Procter & Gamble Co., Nextel Communications and Southern Cali

#### **Mood More Than a Pretty Site**

fornia Edison

The study's findings reveal a serious weakness for many businesses on the Web, said Conrad Hanf, an analyst at Dedham, Mass-based ARC Advisory Group Inc. Companies need "more than just a pretty Web site and e-mail address HRI s " he said

"People who use this technology expect it to work, and if it doesn't, it's frustrating,



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# CA Unveils Management Framework Beta

But integration of tools has been slow

BY SAMP LAIS Computer Associates International Inc. last week released the beta version of its new enterprise management framework, Unicenter TND.

Industry analysts lauded the possibilities TND offers for managing not just a company's information technology infraetmacture but also its entire

business environment. But they also noted that although CA was trumpeting TND's visualization capabili ties, predictive capabilities and business-oriented views of network data, the company was quiet regarding the state of integration of data repositors tools that CA gained when it acquired Platinum Technology

Inc. last fune. That integration is progressing more slowly than had been hoped, said Michael Dortch, an analyst at Robert Frances Group Inc. in San Francisco. But to raise minor objections about it is to miss the real value TND could offer, he said.

"If I'm a network or systems manager, and TND gives me the ability to scroll forward and backward in time to view my infrastructure and predict problems, that's an obvious immediate benefit," Dortch said. But think if you could apply those same predictive facilities pects database." CA's long and intense support

of visualization comes into its own with TND, said Steve istrator who is now an analyst at Engage com Inc in Boston Foote referred to a site with

10 million systems and network management data points. "How do you deploy threshold definitions for events on that many data points? You can't." at least not manually, he said. The ability of TND and CA's Neupents neural network technology to automatically deploy and, over time, refine those de-

finitions is "impressive," Foote said. "It's been hard enough to do anything like this in a distributed shop but virtually impossible in an e-business shop," he said One reason for the difficulty,

be said, is that "e-business application performance is so subjective. What constitutes a good response time at one time for one application may not be good in the context of what your competitor is doing "B



# Airlines' IT Mishaps Slow Operations, Anger Customers

Cable cuts affect backup system, too

SEVERED cluster of cables last week left thousands of airline passengers nationwide stranded and North west Airlines Inc. officials wondering why their backup system

was also disabled. The problem began when a subcontractor laying new lines in Eagan, Minn., bored through clusters of cables, cutting 244 fiber-ontic and conner telecommunications lines. The lines in-

cluded those that link Northwest's Minneanolis Sr. Paul hub to the rest of the nation. What Northwest officials soon discovered was that their redundant system lines apparently run aloneside the lines they are backing up. "What we don't understand is why the redundant system

was also affected," said Kathy Peach, a spokeswoman for Northwest. 'It does seem odd that the redundancy is so near the main lines. Because the cut was so severe, it also affected the redundant lines A spokesman for Denver-

based US West Inc., the local phone provider whose lines were cut, didn't return phone calls immediately. But a worker who didn't

want to be named blomed the problem on the "reckless abandon" of the subcontractor who was laving new cables for a US West competitor when the lines were out &

Subscribers' e-mail addresses released

RANS WORLD Airweek trying to appease angry subscribers to its electronic newsletter after their c-mail addresses were inadvertently leaked to other sub-

scribers. Mark Abels, a spokesman for the St. Louis-based airline, said a glitch on March 20 involving new list-management software exposed the addresses of about 80% of the people who subscribe to TWA's e-mail service. Dot Com Deals, Dot Com Deals provides subscribers with infor-

ion about last-minute fares.

Abels stressed that no financial or other personal information about customers was ever released. However, Dot Com Deals' subscribers could be deluged with unsolicited bulk e-mail, also known as soam.

"It was actually a human error, but we've fixed it," Abels said. "The software should have gone through more quality control [before it was used]." While the problems created in this case were relatively mi-

nor, privacy advocates say com panies must do more to protect an individual's informatio "Privacy really has to be of greater concern, and individuals have to have more system training," said Ari Schwartz,

a policy analyst at The Center for Democracy and Technology, a privacy advocacy group

# **Next-Generation Browser** Technology Wins Supporters

After more than two years, Netscape Communications Corp.'s experiment with opensource development is finally inching toward fruition.

week, the America Online Inc. subsidiary said it would launch a beta version of its Netscape 6 browser within 25 days.

Corp., Red Hat Inc., Sun Microsystems Inc., NetObjects Inc., Liberate Technologies and Nokia Corp. - appounced support for Gecko, the opensource browser engine at the heart of Netscape 6.

Gecko was developed with input from Mozilla.org, the opennurce organization founded

hy Nerscape two years and Netscape 6 will be the first Netscape browser to be based on code from Mozilla.org and the first to include Gecko. It will be the successor to the current Navigator 4.7. Originally. Netscape had

planned an interim version of its browser, to be called Navigator 5. "But we got clear feedback from developers that they didn't want an incremental upgrade; they wanted a clean rewrite. said Eric Krock, senior product manager at Netscape.

"If Gecko delivers what it promises - and if other beowser

makers follow Netscape's lead it will enable us to write to standands instead of authoring to the deficiencies and quirks of various browsers," said leffrey Zeldman, a New York-based Web designer and group leader of the Web Standards Project, an

AOL uses Microsoft Corp.'s competing Internet Explo browser for its online service. But AOL intends to use Gecko as a component in future versions of its Instant Messe and ICO products, and in its AOLTV set-top box, Netscape officials said.



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# Survey: Cybercrime Cost Firms \$266M in '99

Cyberattacks cost U.S. companies \$266 million last year — more than double the average

newly published report. The study, released by the puter Intrusion Squad, found

annual losses for the previous | San Francisco-based Comput three years, according to a er Security Institute (CSI) and the San Francisco FBI Com-

that 90% of 273 respondents detected some form of security breach in the past year. Dan Erwin, who conducts in-

formation security strategy and planning at The Dow Chemical Co. in Midland, Mich., said he

believes that the higher loss figures are a combination of more security intrusions and better reporting. "If an infor mation site is down, how do you quantify loss?" said Frwin. But if you have a site you are doing sales on and it goes down, then you are losing sales. That's an easier number to quantify and obviously more

important." Based on information from 273 of CSI's members, 70% reported serious security attacks, including theft of proprietary information, financial fraud. systems penetration from outsiders, denial-of-service attacks and sabotage of data or networks. This figure, up from 62% the year before, didn't include data from the most on-security problems those caused by computer viruses, laptop theft and unau-

#### Costly Problems

Topping the list of costly security breaches was \$66.7 million in losses from theft of proprietary information reported by 66 respondents and \$56 million in losses from financial fraud cited by 53 organizations. Sixty-one respondents said they suffered \$27 million in damages from sabotage of data nr networks, compared with a total of \$10.8 million for previous years.

Richard Power, CSI editorial director, said other intrusions such as the denial-of-service attacks that hit top Web sites earlier this year, were on the increase last year. And because so many firms are conducting e-commerce, these attacks conuted to higher losses. "In 1999, we had 28 incidents of deis of service with a total of \$3.25 million in losses, and in 2000 so far we have 46 incidents for a total of \$8.2 million

dollars," said Power According to the report, 74% of the respondents confirmed that they sustained financial losses due to security attacks. but only 42% were willing and

able to quantify these costs. CSI Director Patrice Rapalus said the report indicated that unauthorized access and security attacks are widespread She said government and private-sector organizations must increase their focus on sound security practices, deployment of defensive technology, and training and staffing of security managers.



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# BRIEFS CA Extends \$4B Offer For Sterling Software

Inc. last week said it was exte by one week - until today - its offer to buy Dallas-based Sterling Selfware Inc. for \$4 billion. The delay as made to give the U.S. Dop. of of Justice time to co latory ravious Inlandia, N.Y.to the largest supplier of stor

# **PSINet Buys Metamor**

Internet service provider PSINet Inc. in Herndon, Va., last week sai it skuned a definitive agreement to inc. in an all-stock trans n-based Meternor has 4,500 see in 70 offices in the U.S. ope, Asia and Australia. Last

#### Nortel to Acquire CoreTek for \$1 43B

compensed manufacturer Telt Inc., for \$1.43 billion in of a third large purchase in the er Kros Inc. in a stock deal rth \$3.25 billion. And last year, paired Boca Raton, Fia.-based a Corp., also for \$3.25 bill

# Intel to Buy Basis

lone Corp. In a deal sed Basis prevides a Im

# SCO Reorganizes, **Expects Low Sales**

Company blames Y2k-related delays: competition from Linux takes its toll

NALYSTS have an planded the decision by The Santa Cruz Operation Inc. (SCO) last week to divide itself up into three divisions. They said the move will help the company's Taramella middleware product and the company's attempts to But some voiced doubts

about the long-term viability of

SCO's UnixWare operating

The Santa Cruz, Calif.-based company warned investors that sales will be below anabuts' estimates for its second quarter, which ends March 3L SCO will be restructured into the following divisions: Server, Tarantella and Professional Services. It expects to report "significant losses" after reorganization costs

In a statement, Doug

Linux can give you the same value proposition

[as SCO] ... for less money TONY IAMS, ANALYST,

---Micbels, SCO's president and

CEO, blamed Y2k-related delays "and other effects" for the shortfall. But analysts said SCO's operating systems are under fire from Linux. "Linux can give you the same value proposition [as SCOl - a Unix on cheap hard-

tems Inc. haven't been entirely

#### Benefits lams said the reorganization

Chester NY

de-emphasizes the UnixWare operating system and will benefit other products, especially Tarantella.

ware - for less money" said

Tony lams, an analyst at D. H.

Brown Associates Inc. in Port

At the same time, said lams,

SCO's attempts to compete at

the high end with Hewlett-

Packard Co. and Sun Microsys-

Tarantella is a middleware product that allows browserbased clients to access applications that run on Univ servers Windows NT servers and mainframes. It competes with MetaFrame, from Citrix Systems Inc. in Fort Lauderdale. Fla. The new corporate structure will allow the product to be marketed and sold more effectively, said Mike Orr, who will serve as president of the

Tarantella division. Chris Clabaueb, CEO of Allegrix Inc., a Santa Chara, Calif-based application ser-

vice provider and Tarantella user, said be believes that the reorganization will benefit Tarantella, "It belos remove the impression that Tarantella is SCO Unix only," said Clabaugh

#### Company Plans The new structure will also

make it easier for each division to pursue the Linux market. said Orr. The company has already announced significant steps there, including professional services and a version of Tarantella for Linux Orr said the company now

intends to take portions of its UnixWare operating system and market them as lavered products on top of other Unix versions and Linux

"That way, we get a bigger market for each product individoally," said Orr. Program ming interfaces for SCO UnixWare and Linux will be "virtually identical." be said. and "increasingly, we will not care which one you use." Orr didn't say how these

changes will affect Project Monterey, the company's joint effort with IBM to develop a 64-bit Unix system for Intel Corp.'s IA-64 architecture. SCO said it expects results for its fiscal year to be "significantly lower" than the original estimates of \$250 million in

revenue and earnings of 60 cents per share.

Nobody expected them to | LinuxCare, a professional ser-"A lot of people were waiting to see how Caldera did,

Hirschkorn said Compared with other Linux offerings, Caldera stock is "priced very fairly," said Hirschkorn. He added that he expects the stock to rise steadi

by during the next few weeks to about \$45 per share. But De-Graw said he thinks that it's more likely to move downward Like most of the com that are riding the Linux wave, Caldera has yet to generate sig-

nificant revenue from its products. For the year ended Oct. 3), it saw sales of \$3 million and a net loss of \$9.4 million. About 91% of its revenue was from software sales, rather than services, and sales have only limited potential because Linux distributions often sell for \$50

# Caldera Makes Strong Debut; Analysts Say Others May Not

Called 'last hurrah' for Linux IPOs

Despite the poor stock perforances of late of some of its Linux brethren, Caldera Systems Inc. made a strong debut on Wall Street lass week. But analysts disagreed on whether future initial public offerines (IPO) of Linux companies will

After repricing its IPO at a range of \$10 to \$12 per share last Monday, up from one of \$7 to \$9, and then increasing it again, to \$14 on Tuesday. Caldera saw its shares start close the day at 29 7/16, up 110%. But the gains were nowhere near those of previous Linux IPOs, such as the offering of VA Linux Inc., which rocketed 733% on its debut in



be a new VA or [Red Hat Inc.]" in terms of first-day gains, said Tony lams, an analyst at D. H. Brown Associates Inc. in Port Chester, N.Y.

Nonetheless, Caldem's reception was enthusiastic considering that both VA Linux and Red Hat have seen their stock sag in recent weeks. "The days of 2006; neturns on Linux [IPOs] are gone," said Iry DeGraw, an IPO analyst at

WorldFinanceNet.com Inc. in Sarasora Ela He said he expects Caldera to be "the last hurrah" for Linux IPOs, with the upcomine IPO of Linux-Care Inc. to see a more muted

"I think we've seen the cream of the crop" of Linux IPOs, agreed Jeff Hirschkorn, an analyst at IPO.com Inc. But Hirschkorn said he believes that the good performance of Caldera will spike interest in





**JRES** 



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PATRICIA KEEFF

# Privacy: Fight for it

BOSTON GLOBE COLUMNIST recently asked: "Is anybody really shocked anymore at how much marketers know about all of us?" Shocked? No. Appalled, yes.

The columnist treats privacy like a joke, an antiquated concept in the face of technological advances. He says privacy is a nonissue, and he sees a benefit via personalization that targets his needs and saves him time.

That's fine - if that's a trade-off he's willing to accept. I'm not, and I am not alone. Privacy is not something you swap for convenience. We should fight like hell to

hang on to what's left of it. It amazes me that the same people who object to being followed around a department store don't mind if they are followed all over the Net. They would probably object if a prospective employer

cruised through their credit and medical histories, but are blase about having their every drugstore purchase online or having their medical information recorded and packaged up for sale.

How is this different? If anything, it's more

Privacy is a hig deal - online and off-line. Just look at its impact on the amount of people expected to fill out the census. People don't believe the data will be kept confiden-

ogy to build "trust relationships" with consumers. Except that trust involves being totally up front with the consumer about what data is collected and what you are planning to do with it and, ob yeah, allowing them to opt out of providing that data. OK, so they won't get targeted missives and a special page just for them, but they can still search the site on their own if that's how they want to

waste their time. Seems fair to me. After all, it's my time, and it ought to be my decision

Sites like WinWin.com are on the right track. They make oo booes about wanting your data, but they leave it up to you to participate, and they reward you if you do. Meanwhile, does anyone else find it ironic

that Europe - that hotbed of socialism and cradle-to-grave government programs, is the ooe standing up for consumer rights to privacy, while our legislators are ducking

DON TAPSCOTT

## More power in Net economy may shift to the people

VIRST IT WAS Beanie Babies up for auction. Now it's people. Privately held start-up eLance.com is gearing up to officially launch its Web site, which has been in beta testing since last summer. It allows independent contractors like graphic designers,

editors, translators and even lawyers to peddle their services to the world.

We may end up looking back at the 20th century's integrated firm as a transitional structure that flourished for a brief mo in history. The fundamen tal unit of the economy seems to be reverting from

the corporation back to the tractors, rather than full-

time employees in big companies, will perform most work. Such networked "e-lancers" will join fluid and temporary webs to design, produce, market and support goods and services. Corporate IT systems will have to be flexible enough to enable highly fund tional and secure links among a constantly change

ing cast of outside contractors ELance.com shows how the Internet collapses transaction costs between different entities. Potential purchasers can issue requests for proposals (RFP) for the jobs they want done. Example 1. would be a company wanting a new logo or a sales brochure translated into a foreign language Companies post their requirements on eLance

and wait for bids to come in RFPs or calls for tenders for big-ticket expenditures are commonplace for governments and large companies. But until now, the practice didn't make sense for small purchases. Any savings captured by the bidding process was overshadowed by the time, cost and energy of assembling

the proposal and alerting potential bidders. No more. Answer a few questions on the eLance RFP template and bidders from around the world can compete for your business, no matter how small. Need a couple of professionally written job descriptions? You can have specialists

and the world bid for the job. The cost to issue the bid is essentially zero ELance offers a reputation rating system similar to eBay's hugely successful Feedback Forum. On eBay, buyers and sellers acquire credibility by

The latest buzz is about building technolthe issue? IT'S SEE-YOU'RE WILLING TO LEAVE IF THAT'S AN EXAMPLE A SECURE, WELL-PRING JOB WITH A DMFORTABLE SCHEDULE FOR AN 85-OF YOUR DECISION-AKING STILLS, WAY HOUR WORKWEST AND A SLAN CHANCE WOULD WE WANT TO OF A HUGE PATION IN 5 TEARS. HIRE YOU?



### NEWSOPINION

pointing to a prominently displayed history of successful transactions. Their online reputation is a critical asset and essentially constitutes a form of digital capital.

ELance is a type of business web I call the agora, or marketplace, where buyers and sellers come together to collectively "discover" the price of a good or service. A successful agora requires a critical mass of huvers and sellers who wish to exchange the same good or service during the same time period, and use the same mechanism

to communicate and conduct price discovery. This isn't as easy as it appears. It's why physical world transactions tend to be fixed-price retail or one-on-one happles. But as eLance illustrates, the Net is perfectly suited to creating prime agora conditions &

### DAVID MOSCHELLA

### XML shifts power to users, but can they handle it?

OMETIMES YOU come up with an idea that you instinctively feel should be important, but you have to wait a while to realize why. For example, in 1995, it struck me that one of the most fundamental changes brought about by the Internet was that customers were getting on the Net because of what other customers were doing. In other

words, technology users such as Amazon, Yahoo and ETrade were doing much more to draw people to the Web than technology vendors, such as Cisco, Microsoft or even AOI -

industry perspective, this

strategy at Manag ness, an internet start up that's building a database of ideas Contact him at

shift in creating demand was clearly apprecedented, and it sure felt like a major change in our industry's value chain. But for several years, it was hard to get past the "so what" test. Why exactly did this matter? It has only been in the

From a historical IT

last year or so, with the sharply rising interest in XML that the significance of this customer-driven

revolution has become clear. If users want to exploit the power of common metatags, shared ontologies, communicating applications and a more databaselike Web, they will have to do most of the work themselves. IT vendors will certainly have a vested interest in helping, but even today's market leaders will find it difficult to drive the

necessary setting of standards And standards are what the XML movement is all about. Although much has been written about

today's confusing mix of industry-specific initiatives and overlapping associations and institutions. I'm much more intrigued by a larger ques tion. For more than 30 years, IT professionals and their corporate bosses have told IT vendors that they want interoperability and standards. But now that the standards hurden has shifted to IT users themselves, will they be up to the task?

IT veodors have already taught us a great deal about what to expect. Over the years, most standards efforts have failed because IT vendors, understandably, find it difficult to balance their customers' clear interest in interoperability with their own competitive and business objectives Indeed, one could argue that there have really been only three great standards successes, and that each involved either chance or government

leadership or both. For example, PCs became standardized because IBM totally dominated the computer business and carelessly decided to provide an open-architecture PC product. TCP/IP and the related Web standards grew out of government and university

fizzle out.

Open City Communications

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Gold Rush and the buy

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names to their rightful

owners for free. I'm sure

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efforts largely unconcerned with commercial implications. And the international GSM (Groupe Speciale Mobile) cellular phone system emerged from close (although non-U.S.) government/vendor collaboration

But in the end, all three standards processes resulted in vendors bringing specific products and services to the market. This, of course, is some thing vendors will continue to do. There are already many new companies trying to develop shared ootologies fur specific markets and indus tries, and software giants such as SAP. Oracle and Microsoft will influence XML usage in a oumber of important ways.

But the big changes will have to happen at the customer level. In fact, many IT user organizations will soon find themselves in some very ven dorlike predicaments, juggling the desire for interoperability with their own competitive inter ests. Looking back, it has taken several decades for standards to encompass most of the IT vendor husiness. But just because our industry now moves more quickly, standards woo't necessarily evolve more smoothly. Indeed, many IT nser organizations will soon learn what being an IT ven

dor has always been about.

### Internet speculators can learn from past

N DOMAIN Nam Speculation Doesn't Merit Bad Image [News Opinion, Feb. 21]. John Zehr begins, "In 1626. Peter Minuit traded some useful but inexpensive household items for what would become one of the most valuable

pieces of real estate in the world - Manhattan." Actually, Minuit's transaction took place in 1624, and Minuit came out the loser. The Native Americans with whom he traded didn't own the land which they "sold" to Minuit, who envisioned a Dutch farming community on the island of

Manhattan Unforme nately, Manhattan's rocky soil doomed any attempt at aericultural viability, and the Dutch would lose Manhattan a few decades later to the British with absolutely

nothing to show for their day's domain-name spec efforts on the island. Indeed. Minuit might be the proper inspiration ated throughout the for the seemingly endpost-Civil War South,

less waves of Net-based profiting off the despera entrepreneurs who are envisioning get-richtion and dysfunction of a war-ravaged economy. quick schemes in cyber-Tom LaTourette space: a confused explor-System Arts er in an alien land whose Morae Virule great plans eventually

tlatoure@systemarts.com Leap day not a problem

T LOOKS LIKE Leap Day was another Y2k OHN ZEHR'S drawing of historical recent popeyent. I have one question: Why would anyone expect any problems? Any programmer domain-name specu-

who researched the Gregorian calendar and found that most century years aren't leap years would also know that this year was. Programs that assumed that years divisible by four are leap years work fine for the year 2000. Bruce Wes

St Paul Mon Facts about Linux

CIMON L. GARFIN-KLE'S column ulators would be the car-Three Univide pethaggers who prolifer-Systems May Be Better Than Linux" [News Opinion, Feb. 71 started out well, but there were serious lapses in the editing and research.

Most important, Linux is just the kernel, and almost everyone using Linux installs a distribution that includes a lot

of additional free soft-Second, it isn't true that all of the Linux distributions have the same GUL In fact, Red Hat includes both GNOME

Third, the reference to "automatic memory allocation" is surprising since memory allocation has been a feature of Unix for decades Shreuel (Sevenner J.) Metr

and KDE

Annandale, Va

shmuelifacm.org More letters, page 40 COMPUTERWORLD welcomes

comments from its readers. Letters shoulds't exceed 200 words and should be addressed to James Ecide, letters editor. Computerworld, PO Box 9171. 500 Old Connecticut Path Frammeharn Mass 01701 Fax (506) 879-4843, Internet Include an address and phone number for immediate verification

GEOFFREY JAMES

### Staffing challenges call for new breed of IT manager

THINK YOU CAN ATTRACT top IT talent by dangling a big salary? Think again. With e-commerce becoming the hottest technology trend since the PC, many candidates are looking for more than just a job - they want a piece of the action. And that means IT managers will need to develop a whole new set of skills for themselves

With the Internet increasingly dominating our high-tech economy, top IT professionals are being snapped up by dot-com start-ups that offer not just jobs but also highly attractive stock options. While it's true that such jobs entail risk, today's job market is so out of control that there are always a dozen opportunities waiting in

the wings, even if the dot-

com flops. So, traditional IT departments are at a disadvantage when trying to recruit per-

sonnel to work on e-commerce applications, because the best candidates are likely to want deals that are sweeter than what corporate guidelines allow. As a result, some companies are taking their cues from the dotcompetition and spinning off their e-commerce groups into separate businesses to attract the brightest and the best

For example, Wal-Mart - a company with a worldwide reputation for advanced data processing - has decided to spin off Walmart.com. The idea, according to James Brever, managing partner at Accel Partners, the Palo Alto, Calif., venture capital firm that's recruiting Walmart.com's management team, is to "greatly accelerate the Web development effort and attract true world-class

management and leadership to the new company. Even big accounting firms - which never had any trouble attracting top talent to their IT consulting practices - are struggling with this issue. For example, employee demands for liberal compensation drove the Big Five to start compensating employees by awarding them stock in the companies that those accounting firms were trying to help. But the Securities and Exchange Commission didn't like that. The agency felt the pay plan might create a conflict of interest if the accounting firm that was auditing the books had employees who owned significant stock in the client company.

Because of this, three of the Big Five are restructuring their IT consulting practices. KPMG and PricewaterhouseCoopers are spinning their consulting businesses into separate companies, while Ernst & Young is selling its consulting business outright to Cap Gemini. Andersen Consulting was for years separate from its erstwhile parent Arthur Andersen, leaving only Deloitte Touche Tohmatsu still trying to be a one-stop shop. These changes illustrate that top IT professionals simply aren't willing to settle for business as usual, according to Ernst & Young spokesman Larry Parnell. \*Employees would rather work directly for the start-up [than] hang around for

years waiting to become a partner," he says. The fact that IT employees now want a piece of the action means that IT managers will need to learn a truckload of new skills. Gone are the days when an IT manager could act like a character in "Dilbert." It won't be enough to run a department; the IT manager of the future will also need to know how to build a business. Thriving in this brave new world will mean cutting deals with venture capitalists, building business plans that make sense and creating corporate cultures that

can innovate quickly. In other words, attracting and retaining top IT candidates will mean giving more than lip service to those promises that computers will change the way your company does business. Are you ready? 8

WILLIAM ULRICH

### Legacy systems must support key business initiatives

EGACY SYSTEMS have survived mergers, acquisitions, divestitures, Are-engineering efforts, technical revolutions, industry realignment and Y2k. These systems, some dating back to

the 1960s, remain the mainstay of information management capabilities. even as companies focus on e-commerce opportunities.

With the bulk of a company's information knowledge base locked up in these legacy systems. IT must interface, integrate, migrate and/or retire them before they hinder ongoing

business strategies Some people think "legacy" is synonymous with Cobol, but there are hundreds of legacy languages, many of which (such as assembler and C)

are harder to decimber than Cohol. And leesew systems aren't just restricted to the mainframe. They've expanded to include Java, XML, network environments and a host of evolving categories. The foremost legacy systems challenge is the need to articulate their value and identify what role they'll play in future information initiatives.

Legacy systems are easy to ignore, until IT is forced to confront them. Y2k made us pay atten tion to legacy systems, and now e-commerce and back-end integration requirements are forcing us to pay attention again. Creating an order-processing Web site is a manageable task, but ensuring that orders are posted, inventory is in stock, fulfillment is ensured, distribution is verified and payment is received requires back-end systems integration. Linking e-commerce applications to legacy systems is a challenge facing numerous industries in the business-to-consumer and business-to-business areas. And this has put the legacy systems challenge back on the IT agenda.

Addressing these challenges requires understanding legacy data and system functionality at an enterprise level and down to a granular level. so any project team can interface with, capture and reuse legacy data and business rules when needed. With a common reuse, integration and migration strategy, project teams could quickly distinguish between valuable, redundant, obsolete and irrelevant data and business rules. A framework for meeting these challenges is essential.

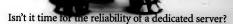
As a first step, organizations should create a "systems knowledge base," or map, of an enterprise-computing environment. They could then for example, have accurate depictions of the systems, data and business rules invoked under various transactions. Analysts would be able to determine the legacy components needed to interface with, be reused under or be replaced by an e-commerce application. The systems knowledge base would reside in a commercial repository or database, be loaded and updated using commercially available analysis tools and accu-

rately depict all production environments. This knowledge base would include all physical systems components, business data and rule definitions and relations. Analysts could use and update the information as they plan and deploy system upgrades, migrations, integrations and e-commerce projects. While the tools for capturing and consolidating information within this knowledge base could be built using mostly commercial technology, a strategy would have to be developed to

deploy this information across projects. The legacy systems challenge must be tackled at an enterprise level because the installed base of systems and related data is too interdependent to tackle from a one-department perspective. This requires a comprehensive strategy for dealing with logacy systems across business units Executives must craft a phased transition plan where immediate value can be gleaned from the systems knowledge base, while focusing on longterm goals for these systems.

Long-term goals include, for example, shifting to component-based development paradigms. A central architecture team must drive and monitor progress toward these goals using the systems knowledge base as an enabling tool. Applications management, e-commerce project teams and architecture planning teams should synchronize efforts under this common strategy. This will ensure that legacy systems support - and don't hinder - critical business initiatives.





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### READERS'LETTERS

### Farewell to the floppy disk? Maybe not, readers say

T READ MARK HALL'S editorial ["Farewell, floppy," News Opinion, Feb. 28] with interest. While use of the floppy drive is becoming in-

frequent, it still remains a crit-

ical component in the support I am manager of support services for a Fortune L000

corporation, and my company uses the Drive Image software and Partition Magic software extensively to provide support, backup and data movement

Until CD-RW drives be-

support process. Lawrence Mann Georgia Guil Corp.

come much less expensive, I think the floppy will continue exact same day I received to play a critical role in the a brand new book on strategic planning that included — oo kidding — a floppy disk. The "puny amount of Baton Rouge, La. data" was extremely beneficial

and contained several useful morkshaste I'm glad our IT manager didn't "rip out every floppy drive on every desktop" as Mark Hall proposed otherwise I might still be trying to convert data instead of work-

DEAD THIS BEST OF the

ing on a strategic plan. Bret L. Popper Serior business consultant Park Ridge III

MOPPY DRIVES ARE far from useless. Using a boot disk to get on the network for a server-based deployment is something I'm sure a lot of IT support people still do. And when a Windows 95/98 PC has a serious operating system problem, getting on with a boot disk that has a few hasic utilities can be very helpful in repairing it — or at least allow you to remove critical files.

Floory drives are dancerous entry points for viruses, but isn't it more likely that a comnamy will get viruses transmitted via e-mail? And floppy drives are exit points for information, but the editorial also noted that L44MB is "just a spit in the ocean of information today"

Also, what's to stop a person from surfing to his free e-mail account and attaching informatioo to an e-mail document to himself?

Tom Casten Rolling Meadows III

HEN OUR SMALL business moved, i business moved, it took us over a week to get the home network and office network back up to smuff Rather than miss hold our client appointments dur ing moving week, we just shagged floppies for a few days, cetting back to network ing when it was convenient. Of course we used the new fast connections (once they were up) to shuffle files, but the floppies were a necessary kludge for the time being.

Irrational? I think not. LawSorkt com

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### What is Windows 2000 Advantage?

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### Online This Week

### Global QTEST network opens Vindows 2000 doors to users

n you combine Compaq's Windows 2000 expe h the eagement of its Services organizations to help stormers, one result is QTEST, a dynamic global Win-ws 2000 environment with 150 servers.

### Windows DNA 2000: Linchpin in Microsoft's e-comm strategy

we Distributed InterNet Application (DNA) is a plast model and a family of products that enth her of products and technologies targeted prin-commerce Web altes. When fully developed, we DNA 2000 will offer these abos scalability, it ing, peritioning and application integration.

### When to use different **Active Directory models**

www.Windows2000Advant

Windows 2000

### Compag, Microsoft building ProLiant Datacenter strategy

By Steve James In an effort to empower Interne based customers, Compaq's Pro-Liant "eGeneration" strategy is targeted at bringing ProLiant servers into a market now dominated by mainframe and midrange servers. As part of this strategy, Compaq is introducing 32-processor servers for large Internet and e-commerce applica tions that need higher performance, reliability and scalability As part of a joint program

between Compag and Microsoft. a second wave of Compaq's "eGeneration" servers will use Microsoft's Windows 2000 Datacenter operating system beginning in the second half of this year. It is to be the fourth version of Windows 2000, and Microsoft says it will debut in late June.

Datacenter supports up to 32 processors, compared with eight processors supported by Advanced Server. Datacen ter also supports 64 grgabytes of memo compared with Advanced Server's eight

Compag's goal is to improve server habitry, availability and scalability so its ProLiant servers can be used in place of nframe servers or midrange servers that now cost \$1 milion to \$3 milion. says Tim Golden, director of enterprise server product marketing at Compag. For comparable computing power, Compag machines cost less than half as much as the mainframe and midrance machines, and over time Compag

expects the ProLeant pages to drop to one-third or one quarter of the competing pnce, Golden says. Chris Ray, Microsoft product manag for Windows 2000, says the two comp nies share the price-slashing goal and have developed the strategy to achieve it "Compag and Microsoft feel we can drive

prices down and still provide high levels of reliability," Ray seys. Compag's 32-processor servers are

based on the Unisys Cellular Multi Processing (CMP) architecture. That's a switch from Compaq's eight-processor servers, which use Symmetric Multi

Processing (SMP) architecture The switch is being made on the new servers because the CMP architecture will enable Compaq to config ure a machine as one 32-processor unit or to partition the machine into smaller units so that it functions as two 16-processor servers or four 8-proces-

sor servers. When partitioning is done each set of processors runs its own operating system. A third generation of ProLiant servers scheduled for release next year will scale beyond 32 processors.

Compan save The ProLiant-branded Compag servers will be tested with Windows 2000 Datacenter and delivered to the customer with a Microsoft certificat that machine and operating system will work together for optimum performence.

For the full text of this story, visit www.Windows2000Advantage.com.

Microsoft

### **ADVANTAGE**

### ► CASE STUDY

## Alibre Win 2000 network stands up to the acid test

By Elisabeth Putnam

Early in February, Alibre Inc. was justs a few weeks away from Zen-Hour, when the corrpany's Webbased mechanical design application service, still technically in beta, would become generally available on the Internet. The point of this nost beta is to really tax our system, test how many users we can support," says Laura Herrick, Alibre's vice president of operations,

dent of operations.
Alibre executives expected, in fact hoped, that the test would be an arduous one. Fortunately, the application service provider was getting some powerful publicity just prior to its taunch. Alibre was one of three applications demonstrated in Microsoft Chairman Bill Gates' keynote at the Windows 2000 introduction. "We're hoping to get thousands of new users." Hernick saws.

To ensure prompt, trouble-free access to its Webster and application services. Albre needed a powerful, scalable server intrastructure, Henck says. "He rather fike giving a large party when you're not really sure how many guests to expect. You need to have a lot of backup supples on order so you don't run order so you don't run

Alibre made two key design decisions early on, to ensure it could meet the needs of its "quests" now and over the long term. First, it standardized its application architecture on Micropott Windows. NT and Windows. 2000. Second, it selected managed Web hosting service provider Data Return to build, manage and coorate the undertained.

Web platform.
Albre offers a unique, Web-based business model that enables companies with initiod budgets to make use of sophisticated mechanical design tools without paying for expensive cohorus and server hardware upfront, according to Stave Emmons, Albre's vice president of development, Instead, customers per for service on an

incremental, per-user, per-year basis.
Using internet Explorer on a Windows client, users go to Althre's Web site, receive authorization and download the client that allows them to interact with van-

ous Web site pages.

As a Web-based service, Alibre can provide customers with the lend of ongoing, personsized support rarely offered by mechanical design softwere vendors, Herrick says. "We're just a cick swey." Support includes webcasts on how to use the design tools and services and online

For the full text of this story, visit www.Windows2000Advantage.com



The Web Magazine for IT Leaders implementing Windows NT and Windows 2000 with Compag Services and Solutions



### Microsoft, Compaq 'in'

By Braze Hoard
If there was one ringing
message immerritied by
the keynote speeches of
Compag CEO Michael
Capellas and Michael
Capellas and Michael
Chairman and Chief
Software Architect Bill
Gales during the issued
of Windows 2000, it was
this: When it comes to
Windows 2000, Compag
Windows 2000, Compag

amend Microsoft are movring — In the secret of Cappellias — Th lockstep. — The lockter. — The lockter. — The lockstep. — The lockter. — The lockter. — The lockter. — The lockter. — The lockline. — The lockter. — The lockter. — The lockline. — The lockman lock-— The lock-

at a world record on the highly respected and integrated and integ

Why Compac?
Because when it comitime to get down and dirty with sostable, relate notice to go where no hardwar had gone before, Microsoft chee Compact, it's that simple.

Gates noted, "Our competition and our customers will be amazed

by this."
In order to apprecial
how Compaq and
Microsoft are moving in
octation toward the
further, it is flustrative to
water how they have
entrored each other in
the past. Both companies have made extennies have made extenments to Windows 200

periopation in the Rapi periopation in the Rapi Development and Joint Development programs. Capellas declared, "We've got 18,000 Glente and 300 servers running Windows 2000, and I can tell you it's gone very well." Conge is also a Global Launch Parliner and Microsofts

For his part, Galas noted that Microsoft has been eating its own dog load in a big vary for when months since it proposetted 70 000 letter

converted 70,000 into nal dealage to Windows 2000. Both leaders also directed many of their remarks at the need to

structure. 8
For the full story, visi stree, Windows 2006-

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# BUSINESS

### **COCKPIT VIEW**

When designing fighter aircraft, coordination is a muss. At Lockheed Martin, a oew database is helping the company get a multidimensional view of information on everything from labor to parts to staffing, so it can fine-tune processes and cut costs, 48

### RUGGLING

Now that Peapod Inc. has faced its financial woes head-on, the company is racing to replace \$120 million in failed funding deals • 46

### KEEPING PACE

After two ceoturies as a trendsetter, the New York Stock Exchange is investing millions in technology to keep up with competitors. The first of its new systems is set to be launched next month.» 48

### TOUGH SELL

Installing new customer relationship management software iso't a problem, say users. The real challenge is making it mesh with the business side. • 50

### TECHNOLOGY FAD OR REVOLUTION?

Where were all the big boys when cell phones came on the scene? Nowhere in sight. For businesses to keep an edge in the IT world, they must learn to spot new technology waves at the onset, says Jim Champy. • 52

### NIGHT SHIFT

Almost half of all working women say they barely have time to spend with their spouses or significant others. In today's around-the-clock world, odd hours are a given. But the demand for people to fill technical jobs allows IT workers to set their own schedules, 522

### HUMAN CAPITA

When Skandia saw its assets drop, the financial services and insurance company found a gold mine in its people. Now, the company uses IT to capture its real worth. • 58

### ROADS TO

The market for IT consultants is exploding. If you're looking for a little variety on the job, this career path offers a range of opportunities. Veterans in the field offer advice on the best and worst career moves for consultants. • 80

### AFTER HOURS

night and early-morning trades increases, afterhours stock markets are growing in popularity. But the new markets still have a ways to go, say analysts, \$ 57

### CAREER ADVISER

Is your new CIO clearing out the existing staff to bring in his old cronies? What's the best way to market yourself to start-ups? Fran Quittel offers some advice. 988



### SPOTTING BORN LEADERS

SOME NAME IT. SOME DOWN. You can train employees to excel on the job, but expecting them to effectively take charge is another story. Recognizing who does and who doesn't have the potential to be a project manager isn't easy, but there are some surefire ways to spot diamonds in the rough.

### New Tools Help Lockheed Martin Prepare for Takeoff

Database helps fine-tune plane production, cut costs

YOU DESIGN formance fighter aircraft like the Lockbeed Martin F-16 and

F-22, gathering information about processes, parts and procedures is critical to producing a superior airpl while controlling costs. But that's hard to do when

your critical data is scattered all over the place and there's no systematic way to analyze it, said Peter Wynne, who is the director of product management in-

tics Co. in Fort Worth. Texas To solve the problem, Lockheed Marand build high-per- tin last year decided to centralize data on Hyperion Essbase, a database developed by Hyperion Solutions Corp. in Sunnyvale.

Calif. Essbase and its accompanying suite of tools employ online analytical processing (OLAP) technology. OLAP lets users from engineering, purchasing, manufacturing and other areas in the

company examine data relative to aircraft design and manufacturing from a multidimensional view. The system has helped cut analyst labor costs by as tegration at Lockheed Martin Aeronaumuch as 15% to 20%. Wynne said.

project costs, technical performance and risk for different airplane pro-

For instance, he said, managers can look at the materials used to make the leading wing flap on a fighter aircraft, then analyze manufacturing time, cost and other variables. This way, they can ninpoint problems and work on better meeting deadlines.

cutting costs and fine-tuning production in the future. "We also have the capability to measure the unit cost

of an F-16. We can go into the various factory databases and pull out costs per unit and look at those over time." Wynne said. "We can see how that [cost] might change, vary or get hetter through implementation of efficiencies.

Essbase can also help the company analyze costs and production to determine which processes would best he outsourced, said Wynne

And it can be applied across aircraft programs, he added. Many of the essons learned on the F-16, for instance, can be applied to the new Joint Strike Fighter that Lockheed Martin is developing for branches of the U.S. and U.K. military.

Lockheed Martin also uses Essbase for staffing forecasts. "We have about 1,000 integrated product team leaders," Wynne said. They input their staffing needs, and the OLAP system can match them "almost down to the skill level." I



### **Peapod Online** Grocer Is Wilting

With cash reserves dwindling, or grocer Peanod is working "round the clock" to replace a \$120 million funding deal that fell through recently, said a Peapod spokesman.

Estimates of how much time Peapod Inc. in Skokie. Ill., can buy with its \$3 million in cash range from 30 to 45 days, depending on what its debts are. Pea pod's board of directors last week said it had directed its financial advisers to find alternative financing or a buyer.

On March 20, a class-action suit against Peapod was filed in the U.S. District Court in Illinois on behalf of those who bought securities in Peapod from Nov. 8 to March 16. The suit charges Peapod's officers with "misrepresenting its cash funding peeds."

But Peapod's woes "are not an indictment of online grocers," said Barry Stouffer, a food industry analyst at J. C. Bradford & Co. in Nashville. "From a consumer standpoint, it's a great ser-vice, a great time-saver." Stouffer said. There just aren't enough people using the services yet to provide the scale."

Analyst Jennifer Marino at eMarketer, an e-commerce market research firm in New York, said she agreed. "It's easy in New York City, where you have the population density," she said. "The challenge comes in bringing less urban areas online."

Proprietary inventory and distribution software is a "linchpin" in the profit strategy of San Francisco-based Peapod competitor Webvan Inc., said Webvan spokesman Bud Grebey. van licenses software, including

Web fulfillment and logistics software from The Descartes Systems Group Inc. in Waterloo, Ontario, and "book ends it with our own proprietary cod ing," he said.

A customer specifies a 30-minute delivery window for an order, and soft ware determines when each item must be pulled so the whole order arrives at once for packing and delivery. But Stouffer downplayed any edg

such software might provide. Profitability \*will come down to making the math work," be said. A 100,000-square foot facility must generate \$150 million in annual sales, but "none have proven they can meet that target," he said Ironically, Peapod had just finished

its most successful quarter. Sales were up 46% and margins had improved om 25.4% to 21.8% in last year's fourth quarter, former Peapod CEO Willia Malloy said in a statement released before he unexpectedly resigned last week due to health problems.

Peapod lost \$28.5 million last year. but its competitors fared far worse: Webvan lost \$76.3 million and Kirkland Wash-based HomeGrocer Inc. lost \$84



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### BUSINESS

### **Under Pressure, the NYSE Moves Online**

BY MARIA TROMBLY
The New York Stock Exchange | members and some o customers by late April.

creasing pressure from allplans to begin offering limited lt's a big move for the more electronic trading oetworks.

Internet access to its broker than 2-centuries-old stock ex-

cally, 10% are not. To make the exchange more competitive, the NYSE has invested millions in new technology, pushing the company into the red in the fourth quar-

trades are tracked electroni- ter by \$800,000 - its first quarterly loss since 1991.

Common Access Point, the first part of the NYSE's new electronic initiative, is a \$15 millioo extranet that will let brokers use industrywide standards - TCP/IP and Financial Information Exchange (FIX) to communicate with the exchange, rather than rely on the

proprietary systems and order forms currently used. Also planned for next month is the rollout of Institutional XPress, which the NYSE will use to send out bulletins and informatioo about stocks, ex-

plained Santo Famularo, the NYSE's vice president of infrastructure technology Capacity shouldn't be a problem, said Famularo, because customers won't be able

to use the system interactively to request more quotes. to July, the NYSE plans to implement financial industry standards-based communica tions for the Common Message Switch, which is used to send electronic orders to the NYSE

point of sale. Then, in the fall, the NYSE expects to capture the final 10% of trades that aren't being tracked electronically with its new Froot End Systemic Capture program, which still needs approval from the Securities and Exchange Commission.

Despite the changes, Famutaro said, the NYSE has no plans to eliminate the floor. "In our vision, the trading floor cootinues to be the main mechanism for the exchange," he said.



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### Can IT Managers Be Heroes?

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### Meshing CRM, Business Poses Challenges

Osram Sylvania Inc., a lighting pieces of SAP AG's new cusmanufacturer in Danvers. Mass., this spring plans to be ment (CRM) software.

one of the first users to install tomer relationship manage-

the applications doesn't faze Mehrdad Laghaiean, vice president of information technolo-

gy at Osram Sylvania. "From a software point of view, we're ready for whatever SAP throws at us," he said.

But the business side of the equation is more complicated Like several other companies.

Osram Sulvania is finding that dealing with the business issues created by CRM systems can be a bigger challenge than

installing the software. SAP's applications will let lighting buyers use the Web to place orders directly with Osrum Subrania instead of basins to negotiate prices with multiple distributors. But the com pany still wants its network of distributors to deliver and ser-

vice the products. "A lot of people have to understand how to [use] this," Laghaican said. "It's not a simple supply chain, and we're mant that we don't want to do something to harm our relationship with the distributors." In the end, he added, business managers will have to make the call on how the new system will actually be implemented.

For Moore Corp. in Toronto. installing CRM software in its Canadian and U.S. operations took just a matter of months. But Tom Doerner, design di rector for sales solutions at the maker of business forms, has had to labor long and hard to sell executives and end users on the merits of the system.

The system, based on software from StavinFront Inc. in Fairfield, N.J., costs more than \$2 million per year to support and upgrade. And Doerner said the chief financial officer was skeptical about its value because of earlier sales initiotives that hadn't paid off.

### Statistical Support Doerner eventually devel-

ped statistics that showed that heavy users of the software bring in 25% more new business than other salespeople But even that hasn't convinced all 1400 members of the sales staff to use the software. Doerner said about 30% still don't log onto the system daily. So now he's developing new measurements in an effort to show that heavy users make more

Enterprise resource planning systems prod most users to adopt standard business procedures that are built into the software for back-office tasks such as accounting and inventory management. But from office sales and marketing activities aren't as codified as back-office jobs, and CRM systems need to be more flexible. said Ioshua Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif. 9

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### STORAGE VORLD





### BUSINESSOPINION

### WORKSTYLES

### The Downside of 24/7 Service

For two months, Minam Boucher kept her expectations real low If she could get home, eat doner and still have enough time to catch a few works. It

was a good day. Boucher, a quality assuran engineer at Burlington, Mass. based Foliage Software Systerns, was working on a class hed avelon industry project. and had little choice but to pull

70- to 75-hour workweeks. She saw her husband. Robert, on Sundays and before bed. That was about it.

Boucher is far from alone. A nuery call commissioned by the AFL-CIO found that 48% of with someone see their stand cant others only in passing because they work different hours We know that this was hap sening," said AFL-CIO sockes

n Lane Windham, "But sobody desamed that the num bers would be this high. There are probably two fac-lors behind the findings. Wind ham said. Duel-career coup

are struggling to balance work and child care. And 24-hour vice has become the norm. While the survey (a rando 165 women, with a 3.5% mar gm of error) found that women in lower-paying service jobs are the most likely to work unusual hours, women in all fields seem to be affected.

### Round the Clock

to information technology 24-hour help desics and midd of-the-right server crashes re-

re off-hour workers.
"Perfly it's chance " said. Indham. "But the other issue is that people are doing it because they're forced to take into in this service economy

which as not 9 to 5 Things are back to n outher now, she said, but it's gets sucked into her next alresurrence project You I see it becogeons again And no I don't have any

flexibility," she said Such demands are not unus al for women on IT and Keet Hanna, co-founder of Birl Geeks Inc., a San Francisco-based career training and mentoring organeation. At many companies. there's only about one female ongineer for every 100 males.

and there's pressure to compete. But, said Hanna, with so many IT obs out there, comparies are actively recruting women, and they're willing to make work manageable - with Restme, job sharing, telecom

muting - to attract them People who aren't in IT have this mane of somebody officer behind a computer in a little cubide for 24 hours a day with no ntact with the outside world

### she said. "Thai's not the case Women's World

Get Geeks just completed its own survey looking at what men want in the IT work ce and plans to release the dings this week The survey shows that most

IT jobs are very flexible, said Hanna, "A lot of these women are able to work out of thes homes" she said "They're es sentially creating their own

edge, said Barbara Gomolski,

erch director at Eden Prairie, Minn.-based Gartner Instrute Inc. Because they are more technologically sawy they are more likely to telecommute "Partly it's the technology

said Gornolde, "We've got PaimPlints We've not brothers We're able to stay more cond than people in other pro-ns." - Molssa Solomon

IIM CHAMPY

### Catching tech waves

E'RE STRUGGLING," the executive said. "We missed a technology cycle." The lament came from the CEO of a software company when I asked how

business was going. Somehow, his company had failed to update its products to take advantage of a new generation of operating systems. As a result, the company was having a hard time competing. It probably would survive, but it would be playing an exhausting game of catch-up for some time.

I wasn't surprised that it had missed a wave-Both producers and consumers often fail to act when a new technology, whether an opportunity

or a threat, presents itself A stunning example is the failure of every major telecommunications company to act early on two of the higgest technology developments of our time: cellular phones and the Internet. The initial cellular players turned out to be the "wireless" companies, not the established

phone companies. And the Internet became the turf of the AOLs and other Internet service providers. The big telecoms have

had to spend hillions to buy their way into the game. Theories abound as to why tech nology producers and consumers sometimes miss a wave. If you're a big producer, there's the risk of ar-

rogance and believing that almost any new technology is too insignificant to deserve your valuable attention.

The new stuff is seen as toys and, of course, is always initially small in scale. I think that's what happened with cellular technology and the hig telecoms. It may have been only Nokia and Motorola that saw that almost everyone would

soon be carrying a pocket phone. Some producers and consumers see new technologies as threats to their husinesses. Managers are capable of predicting the dramatic effect that a technology might have on their industries but can be slow to react. Maybe the change

will come on the next person's watch, they rationalize. I believe bankers hav behaved that way for years, denying the immediate impact the Internet will have on the financial services industry.

And sometimes, corporate IT leaders just see a new development as too risky. So they spend millions on old stuff to be safe. After all, Bill Gates himself is reputed to have said that the

difference between old and new technology is that the old technology works.

But missing a technology wave today can be costly. So wheo you see an opportunity, how do you know when to act, to catch the wave? Were the folks at Nokia just lucky? What did it take

for ETrade to launch? My friends in academia would answer that me combination of foresight, inductive rea-

soning, brilliant strategy and good planning was at play at all these companies. Cynics would say that it might have just been dumb luck. But I believe that people who catch a

big technology wave and win have two qualities: They're more prepared than lucky, and they tend to Like surfing. be unabashedly optimistic. These qualities are often innate, but they can - and must - be acquired.

In the world of IT, being prepared means having a good sense of what's going on - both with technology and around your industry. Prepared people see and under stand risk, where the unprepared

wouldn't have the courage to act. Optimism can also be learned. Just remember that very few new technologies get adopted without some bumps along the way. When challenged, do you think that the high priests of Linux believe that the world is conspiring against them or that they take setbacks personally? They see problems

as natural events and expect them to be overcome tomorrow. Of course, hard work and discipline are necessary, but all setbacks orary. That's the way an optimist thinks Like surfing, catching a technology wave is an acquired skill.

Jim Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. He can be reached at JimChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.



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### **After-Hours Trading**

Stock Exchange Inc. (NYSE), Nasdag Stock Market Inc. and American Stock Exchange Inc. (AMEX)

are the indisputable leaders of the ITS stock market But while these three markets attract the bulk of buyers and sellers, they miss out on some trades because they close promptly at 4 p.m. Eastern time Monday through Friday. Demand to execute stock trades may continue after the major markets close and into the wee bours of the morning. To meet this demand, a num-

har of electronic communications networks (ECN) that ac-

commodate after-hours trad-

ing have sprung up. There are nine ECNs, including New York-based Instinct Corp., The Island ECN Inc. and MarketXT Inc., which serve as private alternative stock markets for institutional investors and brokerages, Individuals can't purchase stock directly through an ECN: purchases must be made through traditional stock brokers that partner with FCNs Most FCNs take trades in the early morniny for before-bours trading. until 8 p.m. Eastern time, and a

### few offer trades 24 bours a day. Keeping Pace With the Market

Unlike the major public markets, ECNs offer the advantage of directly matching buyers and sellers, thus eliminating the spread - the per-share fee that market makers and brokers charge for executing trades. Despite avoiding the spread. which can range from 6 to 25 cents per share, the amount investors save by trading through ECNs can be minimal, because buvers and sellers still pay comtion-based fees

'People need to realize that they're still being charged a small percentage of money to trade after hours because [brokers] work on a small commission schedule," says Dan Burke, an analyst at Gomez Advisors Inc. in Lincoln, Mass. "Unless you're a day trader, DEFINITION

After-hours trading refers to the purchase and sale of publicly traded stocks after the major stock markets, such as the New York Stock Exchange, Nasdaq Stock Market and American Stock Exchange, close at 4 p.m. Eastern time, A slew of alternative private markets, called electronic communications networks, have emerged to accommodate after-hours stock trading. They are generally open until 8 p.m. Eastern time during the business week, but some stay open 24 hours a day.

you have to go through a broker to access an ECN." The biggest advantages to

after-hours trading are that it accommodates traders in regions outside of the Eastern U.S. — especially international investors - and capitalizes on early or late-breaking news from an issuer. Much of that news, say analysts, relates to earnings, partnerships and other material announcements from Silicon Valley technology firms traded on the Nasdag

"What has given rise to afterhours trading [are] private, re-tail clients, particularly as relates to Nasdag stocks and continue to make their trades

technology stocks on the West | Coast," says Raphael Soifez, chairman of financial consulting firm Soifer Consulting LLC in Ridgewood, N.I. After-hours news in "one part of the country or world affects prices, so it

### concerns everyone else." Low Volume a Problem The biggest disadvantage to after-bours trading is lack of

volume. Most institutional investors close up shop after the closing hell. Analysts say that until the after-hours market attracts significant volume and meaningful price movements. the majority of investors will during East Coast hours "The real issue with afterbours trading is the shortner of end psers - buyers and sellers - relative to what exists dur-

ing normal market hours," says Soifer. "The average institurional investor trades in \$10 million blocks, but the afterbour market won't accommo date those large blocks, so it's not of interest to them yet.

"It's a chicken-and-the-egg conundrum," adds Larry Tabb. an analyst at TowerGroup in Needham, Mass. "There are not enough participants in the aftermarket to justify the expense of having [traders and brokers] working after the market closes, and there isn't enough volume generated to attract the big investors." ume or lack of liquidity, it takes

### **Hurdles to Overcome** Because of low trading vol-

much longer to find buyers and sellers in the after-hours market. The ECN market is fragmented. During the day, all transactions (are) run into central exchange like NYSE Nasdag or AMEX," explains Tabb. "In the after-hours market, they are not. Bids outstanding on one ECN don't see each other because the after-

Both NYSE and the National Association of Securities Dealers Inc. (NASD), the parent panization of Nasdaq and AMEX, plan to go public by year's end. Along with the cash bounty that an initial public of fering will undoubtedly yield, there will also be pressure to better meet the demands of in ed trading hours

markets are not connected."

Nasdno now accepts quote from its market makees until 6/15 n.m. Faitern time under a pilot program. "So far, things have been rather insignifi cant," says NASD spokesman Wayne Lee. Later this year, the Washington-based company plans to explore extending its trading hours further.

However, "there's still a lot of things that need to be worked out," contends lennifer Schmidt an analyst at Meridien Research Inc. in Newton, Mass. "Longer hours helps in the U.S., but not for overseas traders. If the market is extended for a few hours. I'm not sure how much that gives someone in lapan time to conduct trades."

"NYSE and NASD will do after-hours trading, it's just a question of when," says laime Punishill, an analyst at Forrester Research Inc. in Cambridge, Mass. "They have a lot of projects before them right now, like decimalization, and technologically, they're all behind the online trading firms. After-hours trading will not be that simple to execute, but they can't afford to wait."

### **ECNs: Fragmented Markets**

ch. "At the end of the day, it's still a big pile of liquidity, and as far as the market is co

cent trade on a timely basis in after-hours," says and lyst Stave Shapich at Olde Discount Corp. in Detroit

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# Showing the Value of

recalls Scott Hawkins, director of intellectual capital communication and development at Skandia USA in Shetton, Conn.
We had incredible assets in our people, our customers and our processes, and the future looked very good, but traditional ways of reporting didn't enable us to full yet! Hast story."

he says. "We needed a way to explain that we had a lot more value than just real estate."

Like many companies in todays:
Like many companies in todays
conomy, much of Standish wake was intangible. Its products were insurance contracts — agreements. Its business model was built around managing relationships. "But can you show me a warehouse full of relationships!"

Hawkins akk.

A good question in 1992, and an even better one in today's knowledge-based, high-tech, e-commerce world, where the Securities and Exchange Commission and the Big Five accounting firms are among those struggling to develop reporting frameworks that can properly value what's really happening in the

new economy.

Clearly, traditional accounting methods can't do the job. Baruch Lev, a
Philip Bardes Professor of Accounting
and Finance at New York University's
Stern School of Business, points out
that the market value of the Standard
& Poor's 500 averages six times the net
asset value on the companies' balance
sheets, meaning that traditional accounting methods are measuring only

about 15% of companies' value.

A lot of that value is in technology.
Lev points to AMR Corp., whose shares
of its information technology arm,
Sabre Inc. in Fort Worth. Texas, constitute balf the value of the entire company because of the intangible value of

Sabré reservations technology.
And the new e-commerce companies don't even pretent to play to the bottom line. E-commerce companies are not valued in the traditional way because they reon training more of the traditional way house propring a Prizewaterhouse Coopers is London. They are building control to the companies of the co

IT plays two parts in this drama. It presents as to of intangible value in companies and provides the tools that enable companies to measure that value for the first time. A broader ability to measure for less cost is leading to a broader perspective about what constitutes value, says Chris Meyer, director of the Ernst & Young Center for Business Innovation in Cambridge, Mass. "Skandai is a pionee in recombinity that and attemediate

SCOT FARMANS of Sources

The state of the st

BRAINPOW

### **BUSINESS**CASE STUDY

to do something about it."

Specifically, Skundia has focused IT tools on one area of intangible value—intellectual capital (IC)—and begun to measure, manage and report its findings to investors.

### PIONEERING INTANGIBLES

Skandia began reporting on IC in a supplement to its P99 annual report. The company defines IC as the sum of human capital (such as employee competence, relationship ability and values) and structural capital (such as software, databases, customer lists, manuals and trademarks).

manuals and trademarks). Most companies try to highlight their IC in the management marratives that lead off their annual reports. But that lead off their annual reports that in two ways: It quantifies IC and looks forward, reporting on factors that indicate how likely the company is to reach its strategic goals.

These measures (see chart) are presented numerically and compared with those of previous years to show how Skandia's IC value is trending.

### THE METHODOLOGY

But how does a company determine what to measure? Skandia ties IC reporting directly to its strategic planning process, thus measuring only the

IC that supports strategic poals. During the strategic planning cycle, the IC staff facilitates meetings of workgroups to consider strategic goals and the success factors necesary to achieve them. Then they focus on five areas modeled on the 'balanced scorecast' a speak of popularized by subsection S. Euphan and Durind Roeton scorecast' approach spoularized by subsection of the subsection of the subsection of the subsection of subsection of the subsection of subsection of the subsection of subsect

each area.

Recently, for example, Hawkins met
with call center managers. Initially,
they told him that they measure their
success by comparing the number of
calls must time should amount of

success by competing the number of cells, spore time, shouldment rate

### Skandia Assurance and Financial Services (AFS)

BUSINESS: FINANCIAL SERVICES HEADQUARTERS: STOCKHOLM

ORGANIZATION: 26 COMPANES IN 20 COUNTRIES EMPLOYEES: 6,000

and processing mistakes with their

and processing mistakes with their numeric goals in those areas. But Hawkins points our that those measures tell only part of the story. "Those are indicators of how well they're handling their processes," he says. "But what about their customers and their own people?"

He encourages managers to consider how people and customer value can be used to measure progress toward those pools. For example, a strategic goal one of the factors to achieve that goal one of the factors to achieve that goal increased diversity in the workforce. The group looks for indicators — such as number of women and minorities in their unit — that the company is building those success factors. The can take a low the contract of the co

are "rooted in our understanding of [whisi's] important to us." The first of these facilitated sessions took place at the division level to get took place at the division level to get took place at the division level to get out the first IC report. The IC staff is currently facilitating sessions throughout the company, with a goal of eventually reaching every workgroup and all 6,000 employees worldwide.

### E TOOLS

As Skandia began to work through this process, it became apparent that it would need better IT tools than the quick-and-dirty Microsoft Excel spreadsheets it had used for the first

IC supplement.
The early Excel spreadsheets
evolved into a much more elegant,
PC-based intranet system for collecting, organizing and reporting IC data.
Called the Dolphin Navigator, it was
created by the copporate IT group in
Sweden and Isunched in October 1998.
Dolbhis forcuses on the connection

Sweden and Isunched in October 1998. Dolphin forcuses on the connection between strategic objectives and key indicators within the five focus areas: renewal and development, customers, people, process and financials. Dolphin specifies long-term objectives, identifies critical success factors and activities that will achieve those factors and measures recorres.

Dolphin is designed to show a toplevel corporate overview of IC measures among the 24 operating groups around the world. Then it drills down to the division view, departments, workgroups and even individuals. "It allows you to input results so you can see how you're doing over time." Hawkins says. "And when you're ready to report (to the outside.) you've got the data. Over the next few years, we want

to integrate that all the way down." Skandia is a highly decentralized company, and its international operations eago; a lot of independence, so while certain fields in Dolphin define mandatory measures, others are left to the discretion of the operating company, division or department, as determined during their meetings with the

IC group. Hawkins stresses that it's important to give worldwide operations as much freedom as possible to determine what they'll measure. "It's important to be sensitive to cultural differences " he says. For example, while the U.S. office easures the number of women managers, that concept would be foreign in some cultures. "If you were to mandate that and they tried to live up to it, it could severely impact their ability to do business," be explains. "So you have to say, 'Company B knows what's best for itself.' We try to allow the maximum flexibility for each company, unit and individual

### BENEFITS

Dolphin allows Skandia to collect IC data not only for reporting purposes, but also to manage IC bester. "The reporting is a work in progress, but for the long-term development of the company, we feel it's more important that you manage the intangible assets," says Hawkins.

says Hawkins.

For example, the current high-level view shews certain patterns among Skandals's workwide operations.

Skandals's workwide operations: the control of the co

to development and renewal.

Knowing this, Skandia can predict
the kinds of concerns its operations
will grapple with during any given
stage of their development, and it can
share best practices from others who

have been there.

Another unexpected benefit of IC reporting has been that as employers go through the process of defining what tiber'ill measure, they become more closely in tune with the company's strategic goals. "As they go through this process, they begin to understand why they're in the organization, what their function is, how they contribute to the company. They begin to align themselves." Hawkins says. "If

you get people aligned and understanding the business, you will have a more productive business."

Evidently, Skandia's stock has climbed steadily since the asset crisis of a decade ago. Hawkins stresses that the company's success is attributable to many activities and initiatives, but it's clear that by tackling IC head on, Skandia has turned a financial calam into an image victory, "Today, Skandin can be described as an innovative growth company rather than a tradi tional insurance company," President and CEO Lars-Eric Peterson says in a recent IC report. "Through measur ment tools and continued work on de veloping and applying new work methods, competencies and value-creating processes, we are making invisible canital visible " a

### What to Measure?

Here are some examples of IC measures from Skandia's curre high-level view of its operating companies worldwide:

### companies worldwide: CUSTOMER FOCUS: • Market share (number of accounts)

Customers lost
Fund assets per customer
Satisfied-customer index
Number of contracts
Number of fund managers
Number of funds

### HUMAN FOCUS: \* Employee turnover \* Average years of service \*\*Gender\*\*

Age
 Education
 Number of women in manageme
 Empowerment indea
 Change in company's IT literacy

RENEWAL AND DEVELOPMENT:

Competency development expense per employee

Marketing expense as a percentage

of managed assets

Marketing expense per custom

IT spending

Training expense per esseleme

Training expense per employe
 Premium from new launches
 Increase in net premium

### PROCESS: Outpayment processing the Percentage of applications without error

without error

PCs per employee

Laptops per employee

employee

T expense per employee

Contracts per employee

Processing time on contracts

# best & Start &

HETHER YOU HANG OUT your own shingle or join an established firm, you can reap many financial and personal rewards as an

financial and personal results are in a financial and personal results as an IT consultant. Increasingly, companies are tapping outside experts for high-profile information technology projects. Mamy companies find it economically unjustifiable to keep a full stable of permanent IT specialists, particularly if their core business has nothing to do with IT. And most don't want to be rega-

larly laying off internal IT personnel after bdg projects are completed. Besides, even if companies wanted to avoid outsourcing, most IT managers say there just aren't enough IT resources to go around. For these reasons, worldwide spending on outsourcing topped 599 billion

tional Data Corp. (IDC) in Framingham, Mass., and well

Framingham, Mass., and well over bail of that was spent by U.S. organizations. IDC expects outsourcing expenditures to explode to more than \$151 billion by 2003. "To remain competitive, many

companies outsource as a way to reduce costs, increase efficiencies and refocus critical resources," says IDC analyst Cynthia Murphy. For ITI professionals who believe that variety is the spice of life, following the

y is the spice of life, following the consulting path represents a continuum of new beginnings and fresh exposure to different cultures, business challenges and the latest technologies. To

latest technologies. To
help those considering
consulting. Computerworld
asked several consultants to
share anecdotes and offer
advice about career moves
that paid big dividends, as

well as a few that backfired.

To assure success, veteran

consultants recommend that
you learn humility, get comfortable with diplomatically
speaking your mind and above

all, never stop homing your listening skills.

Note that becoming an expert in any particular technology isn't on the list.

As more than one consultant noted:

"Projects don't fail because of technol-

### ogy. They fail because of relationships." all the **right** moves

Those who have gone the consulting route say they feel that they have an opportunity to work on the most exciting part of an IT project — planning, development and implementation — and that they get to circumvent much of the drudgery of ongoing daily sys-

of the drudgery of ongoing daily systems maintenance.

By plan or by chance, consultants



Industry veterans offer their personal lists of do's and don'ts for building a successful career as an IT consultant. By Joanie Wexler

### **BUSINESS**CONSULTING

have found that certain experiences and attitudes have been invaluable to them in building successful careers.

### Gain intimate knowledge

about business process Getting hands-on business experience as an auditor can pay off enormously. Starting here builds insight as to how technology can be applied to successfully support and advance a business.

Allan Frank, a 20-year consulting waeran and founder of Answer Think Consalting Group in Miami, for example, launched his career in the accounting and finance area. He received a bache lor of science degree in accounting and later earned an MRA



conotine firm Arthur Young

rotating among a diverse set of companies that spanned

many vertical industries. "This was the best thing I could have done," says Frank. He explains that being an auditor requires becoming intisely familiar with the workflow of a business, which translates into understanding how to leverage IT to support the organization. "You follow a piece of paper, such as an order, from beginning to end and see where it goes and the separation of duties among everyone involved along the way. This provides fundamental grounding in business function - which is absolutely necessary for understanding how to support these processes with automation and technology."

### Transition into self-employment slowly

Finding himself the victim of a erper ultimately proved fruitful for Al Schulman, now a vice president as TKO Systems, an IT consulting and ofessional recruitment firm in Atlanta. Schulman had spent II years in the IT department at a bank and was in the midst of running a \$20 million branch office automation project when the bank was suddenly sold and the amiest shandoned

Schulman, who had long considered ulting an unstable IT career VC. SEYS. he realized that job security, in general, was no



dictable commodity in the business cli-"I shought I was in the bosom of the company," says Schulman, who

co-founded TKO Systems three years ago. "Suddenly, I was the new guy on the block with no control over important company decisions - or the direction my career was taking."

Generally risk-averse and a creature of babit - "I want ed to know where I was going to park every day" -- Schulman transitioned slowly into becoming an independent consultant. He spent six months as a contractor, procuring a temporary position through an agency. From there, he moved on to becoming a full-time staff consultant at a professional services firm that followed the model of assign

ing consultants to client projects and paying their salaries even when workers were "on the beach" After 18 months in that environment 'my emotional state was ready" to go it alone, Schulman says, "Now I'm in

control of my career again." The bottom line, according to Schulman, is that if you are by nature riskaverse, you don't need to jump from the frying pan into the fire. You can test the consulting waters in various capacities and see which works for you. He says he was surprised to find

nself in business for himself - but setting there incrementally allowed Going the independent route, Schulman says, gives him the most control over his employment destiny.

### Aspire to be bought out From a financial perspective, ing your own shop can be

particularly lucrative if you can build an impres sive clientele and get scooped up by a higger firm For example, in 1981.

David Passmore, a founder of and now research director at NetReference Inc., a Sterling. Vs.-based firm started a consulting firm called Nerwork Strategies. The firm was later purchased by Ernst & Young LLP. Passmore woke up one day to find his "status in life raised" as a very young partner in the then-Big Six fire

This was one of the coolest moments of my career," says Passmore. After four years, Passmore decided he preferred being part of a smaller

enterprise and went back into busin for himself. "While the Big Six experience was invaluable, ultimately, you start taking orders from the auditing and tax people, which can be less rewarding," says Passmore, Also at such firms, you and your immediate family are precluded from holding stock in any com-

namy that is a client he enve That rules out a ton of firms," says Passmore. He explains that his wife was working at a company that happened to be a client, and she couldn't

even exercise the stock onnat were part of her personal benefits package.

all the wrong moves Most consultants say they learn from adversity, so even bad experiences and mistakes pay dividends down the road.

However, they advise avoiding the following pitfalls: Signing noncompete

### When joining a professi

firm, read the fine print of your contract carefully. If you think that you may want to move on to running your own business, make sure you check out any noncompete clauses with a lawyer. Quite often, firms have

pultants sign these agree ments, which preclude them fro ing in the business at all for a year or more after leaving the firm. The goal is to protect the employer from losing es to the departing consultant.

"Those clauses leave you the optito basically mow lawns and paint hous es for a year," says one consultant Some employers and even attorneys dismiss these

clauses as unenforceable or just boilerplate, but some consultants say you should simply refuse to sign them. even if it means you must seek opportunities elsewhere.

"If you get sued, you automatically lose, regardless of who was right, who was wrong or what happened," notes ltant, who requested anonymity. He says he had to spend six igures to settle because he couldn't ord the three years it was going to take for his case to go to court.

### **Tattling on internal**

Another consultant was once asked by a senior manager at a client company to comment on an internal employee's performance and behavior. The consultant, who asked not to be identified, says his automatic reaction was to comply and be "brutally

"Looking back. I think I would have just kept my mouth shut," he says. His comments got back to the employee, who eventually wound up in charge of hiring consultants.

The consultant says it's the ellent's responsibility to evaluate the performance of internal staff and, since you can never be sure what gets back to whom, you could potentially burn a hridge for the future

On the other side of the coin, Carol Anne Opdin, a 20-year consultan and founder and president of Deep Woods Technology Inc. in Santa Clara, Calif., says it. really paid off early in her career when she asked to be

included in the internal IT team's performance review process. She enve her client was thunderstruck that she would want to set herself up for potential criticism, when it wasn't a require ment for consultants to participate in performance reviews. "But how else was I going to know if I was doing a

good job?" says Opdin The strategy seemed to back fire at first. "I was livid for three days afterward," she says, because her review wasn't stellar. But it made her realize how important the comm nication of expectations was

to her success, and she has carried the experience - and the practice of getting reviewed - with her.

### "Yes"-ing a client to death Clients generally already have

plenty of nodding heads around and often look to consultants to provide a fresh perspective. It is also polically easier for a consultant to stir things up than internal employees who have to survive indefinitely in the corporate culture.

NetReference's Passmore says it's easy for consultants to get the deroes tory reputation as "people who borrow your watch to tell you what time it is But what companies are really paying you for is an outside, unbiased view. Ogdin agrees. "You can maintain a

out being disagreeable," Ogdin says, "Diple is the art of telling som body to go to



hell in such a way that they look forward to

ce writer and editor in Campbell Calif. She can be reached at jounied

# Some people have innate talents for managing projects. Here's how to recognize them. By Kathleen Melymuka

OU CAN TRAIN somebody
to be a good project manager, but great project
managers seem to be
born, not made. Excellence depends on certain
innate characteristics:
Some of us got 'em, and
some of us don't.
"Project management

tencies in three subject areas: technology, business and behavior," says Linda Pittinger, CEO of Prople), a human resources consultancy in Somerset, N.J. Ideally, project managers should have all three, she says. but if you had to choose only one to focus on, it should be behavior. 'People can go to school to learn the technical things, and they can learn the business over time," she says, "The behavioral competencies are the ones people are least able to learn. They're intuitive." Recognizing who in your workforce exhibits these behaviors will help you identify people who are predisposed to success as project managers.

► CHEMISTRY Determining whether someone knows C++ is easy. Figuring out whether he has the right personality to be a great project manager is

trickier. 

Troject management is a chemistry job," says David Foote, a managing partner at Foote Partners LLC in New Cansan, Conn. "It requires all these soft skills that have to do with getting things that you want (and) adjudicating issues between people, managers, egos and agendas. It's bow to get a job done without annoying people," of done without annoying people,"

"The ability to deal with people will make or break a project manager," echoes Kevin McGuire, who has been a project management consultant for nine years as director of services at Primavera Systems Inc. in Bala

Cymwyd, Pa.

But that doesn't mean that great
project managers have to be buggy
sears. If divide them into the touchly
feellies' and the 'let's get-down-tobasiness' people,' says Johannas Rothman, president of Rothanas Consulting
Group Inc. in Aditgon, Mass. Subside years of project management experience and teaches the subject at the
Gordon Institute at Tufts University
in Medford, Mass.

I with the training to the training to spot potentially great project managers, you might start at a company softhall game of pricine. Talways look for people who organize social activities — all trips, bug group lancheous. The training training to the second property of the second property of the second property of people or the second property of the second property of the second property of the second property or the second property of the second property or the s

COMMUNICATION Strong leadership yequires strong communication skills—not eatory, but the ability to connect. You want someone with the ability to bring people together, "Phininger says, to share their vision with everyone. With some people, they do it with just words, 'Rothman says. With some, they have to paint a picture of how it's going to feel. (Othersh have to explain special points a picture of how it's point to people in the groove with them."
They show have an intuitive under-

# BORN TOLEADPROJECTS

### BUSINESSMANAGING

standing of where people are coming from, says Johnson, and it's easy to spot, "When I explain something to them, I only have to start explaining the first two steps and they intuitively know the next steps," she says.

Another key aspect of communication is getting people to respond to you. They have to be good at drawing the best out of their people," says lim Oswald, a project manager with 20 years' experience who does project manag ment consulting as vice president of professional services at Project Management Solutions Inc. in Philadelphia

And that, says Rothman, requires faith. \*Project managers really believe that people want to do a good job and they want to help," she says, "They don't take mistakes personally; they don't think people are out to screw them." Good communication requires good listening skills. "Look for very effective

and active listeners," says Oswald, "Project managers have to be able to bear what people are saying." The ability to see things from another

person's perspective is extremely valuable, says Bill Berghel, a project manager at FedEx Corp. in Memphis. He looks for "somebody who can restate each person's view to his satisfaction."

Effective project communication also requires an ability to get beneath the surface when the whole truth may not be apparent. 'A certain radar tells you when people are being completely en and honest with you," says Dennis Johnson, an assistant vice president at USAA, a San Antonio-based insurance company. "A project manager needs the ability to question without alienating - to listen and watch people's body language and really see what's happening

For example, says Johnson, who has developed that ability during his 25 years in project management, "som will be nodding his head as if be understands, and I know he'll go back and say, What did he really want? Then someone else will ask questions that show be's trying to get to the next level and truly internalize this stuff. I can see it in his eyes. You need that radar." "It's important to draw information

out," Berghel adds. And that can require courage. This is the person who will ask an executive a question and everyone else in the room will gasp," be says. "They have to have the cour age to ask the questions that need to be asked, even if they think it might look silly," because these are the questions that can make or break a project. (Think, for example, of the stupid question no NASA project manager asked about the Mars Polar Lander project: "Are we talking miles or kilo-

meters here?") Finally, says McGuire, that co nications mix includes a touch of sales manship. "You need people who can evangelize - act almost like salescople for their projects," he says. "You have to sell the value of your project to upper management [and] make sure it's visible, and then you have a better chance of getting what you need when

you need it."

► PERSUASION A corollary of communications skills and a hallmark of great project managers is their ability to in-fluence others over whom they have no authority. "In IT organizations, the ect manager often is responsible for delivery of product but doesn't have authority over resources," McGuire says. "They're vying for resources with everyone else in the organization." "It's hard to find people who can influence others and create win-win situations," Pittinger says. "Your cus tomer says they need it in 60 days, and

you know 120 is a stretch. How do you

influence that person who could totally ruin your career? That's the project manager I want to hire." A by-product of this skill is the ability to build and sustain collaborative relationships. They're critical because project managers often need to work with people throughout the company and outside of it. "Look for peop who build bridges instead of walls," McGuire says.

► SEMEROSITY Great project managers share the credit and take the blame. "Look for someone who gives credit to others - who doesn't talk about 'I' but

about what 'we' as a team did." Nancy Johnson says "Look for a perse who doesn't need the whole world revolv ing around him or her," she continues. For example, notice people who share their knowledge and

skills to empower others. That same gener osity makes great roject managers at

great project managers are natural contingency planners. "A good project manager assumes the worst," says No cy Johnson. "They think about, 'If this proachable, "It's not happens, what do I do?

WHEN FEDEX CORP.'S BILL BERN

necessarily someone you want to have a beer with but someone you're not afraid to talk to," Rothman says. "They don't blame people when they screw up. They find out why and then say, Where do we go from here?"

► VISION Great project managers also have vision. They look for patterns and understand cause and effect. This is easy to spot, Rothman says, because they talk about what has worked, what hasn't and why This kind of thinking leads to fore

sight. 'A successful project manag. often knows what is going to happen in a project from the beginning to the end," Berghel says, and that includes the risks. If you can ask whether it would be possible to deliver a certain project within a certain time frame, he says, some people will say "yes" and some will say "no." But a diamond in the rough will say, "Well, if you can get by problems A, B and C..."

Because they can see what's coming,

FLEXIBILITY Great project mar bend their own roles to accome goal. "You want a facilitator," Rothman says, "leading from the front, standi in the middle and pushing from the back. They change places depending on who they're with and what they need."

> HUMOR Given the crazy world they work in, great project managers need a good sense of humor, "So much wacky stuff can happen in a project that sometimes all you can do is laur about it and move on." Berebel save.

> NO SWEAT Though you might be tem ed to draft the guy who used to keep 15 plates spinning simultaneously on The Ed Sullivan Show, be's the one who will perpetuate a project-crisis mentality. ead, check out the guy kicking buck with a cup of coffee and his feet on the desk. "Look for a person who's like a duck," says Nancy Johnson. "On the

surface of the water, it's very placid. Underneath, they're paddling like hell." "The really great project managers look like they're not doing anything." Rothman agrees. "They do some stuff that doesn't look like work to other people: They actually think." 9

# There Are Projects — and There Are *Internet* Projects

Author and consultant Jim Kiphamih has been looking at project management in Internet environments and he soys it's a different species. He says a tradial project is planned, disciplined and measured, while an Internet project is improvised, creative and evolutionary. As a result, the Internet project manager is a different animal allogother. High-mith tells Computer world's Kathleen Melymakin Inti interview.

### Ny do we need to talk about internet project management separately? I differentiate

management separably? I differentiate between traditional projects, which are very complicated, and new-style projects, which I characterize as complex: high speed, high change and high uncertainty.

High unortainty? We don't know exactly where we're going, but we know we have to get there quickly, and we know things will change a lot.

And different della uv needed to these diffuent types of related Traditional Concess are characterized by optimizing. They're well planned, he was trief processes and can be command/control culture. The complex project world is more adaptive, to have to learn how to be flexible, bow to improvise — and you can't get too hung up on measurements and process.

So a pool traditional project manager might not do with a seemples project? In terms of basic personality types, there are people who go toward one side or the other. Some like things planned, they like to work within a fairly rigecrous structure, they like to know what they'll be doing tomorrow, and agreement skills and a billities built around that. A whole other set is built around being more adaptive.

What are the characteristics of people who would be thely to succeed in leternet projects? They have the ability to collainorate, to facilitate group interaction toward some read. They aren't so



WHO IS HE?

Jim Highsmith is a senior consultant at Cutter Consortium in Arlington, Mass., and author of Adaptive Software Development:

A Collaborative Approach to Managing Complex Systems (Dorset House, 2000).

much task-oriented as they're able to asy. "We have a goal, and some how we have to solve this problem to come up with what we've not to do." Facilitation is more important to the "Facilitation is more important in the group what to do because they don't know what in do. They have agility and improvisational skills—as in a jazz band. They need the ability to improvise, channe direction a listle his hu keeping basic fundamentals of values and mission — just as a jazz band improvises around a few basic rules.

What sorts of lundamentals? They have to have some idea of the direction and the business goals for the project, even though they don't know exacly what the project will turn out to be. It's mare of a direction and a set of boundaries and constraints, as opposed to a plan that says specifically what they'll do.

Any other important trains? The ability to let go — to truly delegate a decision framework to somebody clee. It's hard enough to empower employees in the next cube, but to empower somebody halfway around the world as part of your team takes a leap of faith.

Why can't the project manager just make the decisions? You can do that with six or cight people, but how do you do that in a large project team of several hundred people across time and space? Those are the kinds of challenges we have to face in the Internet era.

New 6x you identify a person whe can de foot? The skill is more influencing than controlling.— influencing what's going on because you don't have the same control you used to have. The basic crait is the shilly in use, "I shist crait is the shilly in use," I be still crait in the shill be a traditional sense of making the decision, have becase you lay out a project plan doesn't mean we can actually do that. In the traditional world, which was slower, we could actually control things. In this new casually control things, in this new casually control things, in this new casually control things, in this new for the control of the casually control things. In this new casually control things, in this new for the casually control things. In this new for the casually casually

So what happens to a traditional project manager in an internet-style project? A traditional project manager might go muts, and the people who have been working for a traditional project manager might, too. They come and say, "What do I do next?" They want a task list. Here, all they have is an end goal and they go must.

month like the old project manager was a confamen and this new that is an artist. Well, managing in this environment is much more difficult. It's more about creating the right kind of environment than creating a task list. You have to have an innate belief that creating the right environment will create results, even though you dinn't know how to get

of II but creating that environment in It easy. You have to hold a creative tension, and that's an uncomfortable piece for a lot of people to be. It's hard for the project manager because you don't want the group to be comatose and you don't want then to be psychotic. Creative tension is in the middle, and it's a fairly narrow

where you're going.

tose and you don't want them to be psychotic. Creative tension is in the middle, and it's a fairly narrow place. It's the zone where you went together well, create good ideas, innovate. But the optimizing tendescies of traditional project managers can, if taken too far, destroy that kind of environment. 9



### Energy days to amove and In making life better BUT CHARLES SMIS Obsolete.

erin retraily hundress of thousands of courses in everything from IT certification and desisting applications to accounting and finance, Trainlegies is the largest and asserted training interletions. Search, venture, and by conservors and orders courses, CSV visions, books, and auxiliaries from over 1200 leaking provisors. So whether you need training for your engigence. So whether you need training for your engigence.





IT LEADERSHIP is about using every opportunity—every technology—to relative your company's purpose. It's about defining business imperatives and driving the acquisition of the right technology. But the daily demands af running a company and an IT infrastructure don't always allow the time to get up to speed on the latest innovations.

As Director of the AMS Center for Advanced Technologies, Dr. Butler's mission is to increase not understanding of emerging technologies. "Ours is a commitment to keeping AMS clients on the frontier of IT practice," she usys. "To address technologies that will fundamentally change the business landscare."

# YOU CALL THIS WORK?

MONTHS BEFORE MOST OF US SEE THE LATEST TECHNOLOGY, DR. BUTLER GETS A PEEK AT THE REALLY INTERESTING STUFF,

For example, her team's initial XML research yielded an intelligent agent that collects relevant information arrows multiple sources then symbolists, campaties and dissentance benned an a surv's specified interiors. "Your Next Generation Enterprise and Business Intelligence & Konvidege Management bits are cultibulating now to realise conception non-numeric mining tools," the pitously reports. "We'll be releasing the results soon."

And where does Dr. Butler gain her understanding of emerging technologies? From her peers, at conferences, from the Web and from Computerworld. The Newspaper for IT Leaders.



### Dear Career Adviser:

I have five years' experience developing inventory and financial applications for AS/400s. Our new CIO is axing current staff to bring in people he's worked with before. I've been here two years, and in the past four months.

he's not done. - Workers

Bear Worried To figure out how safe you are, "first assess whether the new CIO has been brought into the company to merge with or wipe out the current staff. You will then have a

he's fired three people and says

better idea of the new CIO's game plan," advises Miriam Erez, professor and former dean of the industrial engineering and management faculty at the Technion Israel Institute of Technology.

You can readily tell. If you were on the team invited to interview the new CIO prior to his arrival and if your skills are up to par, you might be safe. But if your company's market position is poor and its business results weak, or if this new CIO was brought in to transform your employer's current architecture and sys-

With more firings to come, doo't fool yourself into trying to save your job; instead,

figure out if you're marketable, build your curre skill set and bustle to find

new leads Unfortunately with this particular scenario, most neonle waste too much time tryrather than understanding the end is near and seeking

### Dear Career Adviser:

new work.

I have 25 years of IT mangrement and application development experience in the insurance industry, managing successful projects to develop and implement client/server applications. My skills include Oracle, DB2, Visual Basic and

I've also directed develop ment of business applications to support re-engineered business processes, utilizing loint application development methodologies and process and data modeline techniques I saw an opportunity for an international consulting job as a project manager for cus-

tomer software for an online banking application. Can I interview and set this e-commerce project management job? -REALISTIC?

### Dear Realistic "Clearly, devel coing an online application is different from devel-

oping a client/ server application not just from the technical side, but also from a business/marketing side of the design," cautions Peter L. Cherpack, financial

services practice leader at Core Tech Consulting Group Inc. in King of Prussia, Pa. to some online project manaccreent experience, which may persuade someone to conduct a phone interview

Your résumé vaguely refers won't get the job. with you. But you should do intense homework to at least sensibly "talk the talk" that will land you an e-commerce

Doug Benham, chief techpology officer at Concentrer. an online banking software house in Trumbull. Conn says, "First, you'll need to show you can build a project plan that shows you clearly understand the skill sets, technical knowledge and time lines needed for Internet de-

velopment and are ready to staff accordingly. "Theo you must address at least essential basic concepts

project management job.

technologies and protocols such as HTTP, [Secure Sockets Laver L HTML and lavaScript or firewalls and securitw never mind hard-core issues related to session management, security and privacy, or the advan

regarding Web

tapes and disadvantages of vari-ous Web applicatioo models such as [Commoo Gateway Interface). server-side plug-ins, and the

template approaches," Ben-Unless you can stand up to in-depth conversation in those areas, you probably

n is an o

Dear Career Adviser: I have more than 10 years of voice and data telecommunications experience, which includes extensive Internet experience. Most of my career has been in large corporate envirooments. How do I market myself to a start-up? - SMALL

### Dear Bound:

Do your research at www. mercury.com/sytech/companies moneytree, the venture capital site owned by the San lose Mercury News, and at www. venturewire.com to see which companies might be good targets for your taleot.

"Darticularly with this tiebs labor market, in addition to seeking new companies to invest in, finding talent is the second major area of interest for venture capitalists," says R. D. Whitney, vice president of operations at Fitzwilliam, N.H.-based Kennedy Information LLC, which publishes the Gold Book of Venture Capital, a directory of yen-

ture firms and people. Make no mistake: Many young companies woo't want to hire you off your first bounce out of corporate America, because start-ups are an entirely different

To conquer that burdle. you should do some pro bone work with seed companies while you're pitching your corporate skills to the big guns to show that you can handle working at blurring Internet speed.

### Keyword Technology Goes International

al Corp., will operate in oth and Control Americ

The international service will let s in foreign countries nevigate Neb using keywords in their na

### HVAC/R Industry Gets Marketnlace

on (HNAC/R) industry by thou com Inc., an HVAC/R Infacturers and suppliers. Initially, parts will be distributed from a cor tral distribution center, but eCaribox com announced plans to offe local availability this spring.

### Teachers Sign Deal With Lawson

ties Fund (TIAA-CREF) last week inked a deal with St. Pact, Minn. based Lawson Software, TIAA

CREF, the New York-based retire ment system for education and research institutions, plens to use woon's human resources and

nelogies were key factors in their favor, along with the company's ent to serving the financial services industry," said Willia man resources at TIAA-CREF. "We expect Lawson's self-service fee-

### German Consortium Launches Exchange

it's joining with a consertium of

KGaA and Metaligesellschaft AG, is expected to be ready next month and will be open to companies around the world, SAP said in a

### New Member Joins ecFood Advisory Board

Clara, Calif., has named BIE Fri to its now 14-member advisory board. As group vice pres

J. R. Simplet Co.'s Food Group in Bolan, Maho. EcFood.com is looks to the board to help setablish and

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### DATA IS KING

Tools for data storage and management top IT shopping lists this year, according to a Computerworld survey. Other purchasing priorities include replacing older desktop PCs, providing high-speed Internet access for telecommuters, implementing security and managing Web content. 882

### WINDOWS 2000

Purdue Pharma LP plans a migration to Windows 2000 early next year. But IT manager John Kronick says security issues, personnel shortages and the need to support so-phisticated network caphilities in relatively primitive areas will make the migration a challenge. 173

### SECURITY JOURNAL

Week 3: "Pat" scores points by solving an easy security problem, makes valuable friends at his Internet service provider and dips his toe into the perilous waters of policy-making. 78

### QUICKSTUDY

Reviews editor Russell Kay offers a tutorial on authentication, or how your computer system, network or other protected resource knows you are who you say you are. 177

### WIRELESS E-MAIL

Although it's only a year old, the BlackBerry wireless e-mail service and terminal is already providing beoefits for corporate users ranging from hrokerage houses to attorneys. • 75

### EMERGING COMPANIES

Start-up Visionael's products can pinpoint the physical location of every device oo a large network. That capability, says CEO Marc Jones, can save network administrators a lot of time and money, particularly if they're managing the wide-area net-

### work from multiple, distant locations. • 84

Biometric devices offer unforgeable security hased oo users' physical characteristics, such as fingerprints, voice qualities, signature dynamics and retinal patterns. They're more affordable and reliable than you may think. 78

### WHAT'S IN A LABEL?

Plenty, if the Multi-Protocol Label Switching Forum has its way. The group holds its first technical committee meetings oest week io an attempt to bring speedier data-handling capabilities to the Interoct. 72

### OUTSMARTED? French smart card users were in an uppour last

were in an uproar tast week after officials at a hanking industry group revealed that a known algorithm could be used to create forged cards for transactions such as huying traio tickets. • 74

# ONLINE, IT'S THE GOODS, STUPID

CONTENT MAY BE KING, but for retail sites, it doesn't pay the bills. Online retail start-up Foofoo.com learned to surround its products with relevant content, rather than the other way around. It also learned

80

the importance of building an architecture that makes change easy, because you'll always be reinventing yourself.



### Java Gives a Jump-Start to Web-Based Applications

Products help users extend apps from the mainframe

AVA TECHNOLOGIES are beloing some companies take advantage of their existing mainframe applications and data to quickly deliver new Web-based services and applications, according to users. Take Green Bay, Wis.-based Schneider National Inc., a private multibillion-

dollar warehousing and logistics provider for the trucking industry. Schneider used IBM's VisualAge for Java development environment, Lotus Development Corp.'s Domino Go Web server and IBM's WebSphere application development server for the OS/390 in developing an order capture system aimed at improving the com-

pany's ordering and tracking process. The system provides a quick and easy way for more than 1,000 Schneider employees, business partners and suppliers to interact with mainframe-based services via browser-enabled clients. said Steve Matheys, vice president of applications development at Schneides. Schneider is among the companies that claim to bave successfully taken advantage of lava's standards-based development environment and crossplatform portability to add new applications and functionality to their OS/ 390 mainframe environments without sear discription to existing exchange \*From a technology perspective, we

took a big risk" in trying to integrate

Java's object-oriented development approach with a predominantly Cobol. CICS environment, Mathews said, "But it's a double, deliverable thing."

For example, a truck driver trying to enter an order into the Schneider system can go to the company's Web site and gain access to a personal, customized portal site by keying in a uses name and password.

A Java applet running in the browser generates an order entry form, which the driver fills out and sends over the Internet and through a firewall into a Domino Web server on a Schneider mainframe. From there, it goes to the firm's Websphere application server the core lava runtime environment which sends the request through a transaction gateway to an IBM CICS

environment. A Cobol DB2 program invoked by CICS processes the request and sends it back to the driver.

### bust and Scalable Schneider has built "a fairly robust

and scalable client user interface" to work with the older mainframe environment, Matheys said.

An alternative to achieving the same sort of functionality would have involved converting all of the company's lessey code to C++ and supporting fat clients, Matheys said.

Speed of deployment was one of the primary reasons Towers Perrin used lava to create an intranet Web portal for more than 2,000 of its busin consultants worldwide, said Ken Wilson, a project manager at the private

billion-dollar New York-based manage ment and buman resources consulting company.

The portal provides consultants with continuous and reliable access to applicutions needed to respond to client queries, data requests and other trans-

actions. Wilson said. The three-tier application architecture incorporates a standard Web browser-based user interface on the desktop, middle-laver Web servers and a lava virtual machine on OS/390 that runs lava programs using a standard lava database connectivity interface to DB2 for OS/390.

### No Tweaking Required

Using Java lets developers focus on optimizing the way data was presented to the consultants without really worrying about tweaking the underlying platform, Wilson said.

"We chose Java because getting the application developed quickly was one of our highest priorities," Wilson said The project was started in October 1998 and went into production in June 1999. "Our best estimate is that it would have taken at least twice as long to develop the same functionality with

any other language," Wilson said. There are a lot of things that lave brings to the table," such as standards, platform independence and ease of deployment, said Bill O'Donnell, a consultant to the State of Wisconsin in

lava has played a key role in several state projects to enhance existing mainframe applications, as well as building new ones that take advantage of mainframe data, he said. Unlike other languages that involve platform-specific

coding work, "with Java, you can basically start with the business issues and worry about the back-end platform only later," O'Donnell said.

Solid and run Web apps faster! ed a free Caché license at www.e-DBMS.com. or call 800.753.2571 for a free license on CD.



### Forum Meets to Speed Web Traffic

Protocol would help data routers, switches

A group hoping to bring speedier data-

handling capabilities to networks based on Internet protocols will hold its first technical meetings next week The MultiProtocol Label Switching

(MPLS) Forum (www.mplsforum.org), which was formed earlier this month in Fremont, Calif., by a group of network and communications companies, hopes to agree on standards for creating la-

bels for IP data packets, which will make it easier for routers and switches to speed traffic to its destination.

The association, which will hold its

in San Jose, said the MPLS protocol is a

"critical component for extending besteffort IP networks to include support for traffic engineering, quality of service and virtual private networks' through integration of traffic engineering and routing functions.

MPLS promises to facilitate more rapid network customization to accommodate converging applications such as video and voice. The group hasn't said when products using the protocol will be available.

David Drury, vice president of technology strategy at London-based Marconi PLC, one of the association's founding companies, has been appointed president and chairman of the orga-

# All Out to Win 2k: One IT Manager's Story

Windows 2000 migration to an the servers, it'll also go oo all it once was, frankly. A lot of frontline apps. Ironically, it's and start clean. It makes a real already full plate at his company, Norwalk, Conn.-based

Purdue Pharma LP. The pharmaceuticals firm's plans include securing a octwork that stretches across 25 sites, localizing content for ing novice-proof virtual private networks (VPN) for satellite facilities. Computerworld's Cynthia Morgan spoke with Kronick about how his team will face the next 18 mooths' worth of challenges.

## Q: How big is the infrastructure

A: We're running 3,400 users over 25 sites around the world. We're going into countries that can't really support a regular dial-up connection, let alone something faster, and we can't always have trained support staff available.

We use VPNs in many cases, both for the savings it gives us in terms of equipment and connectioo charges and beall the configuring and take care of most of the support issues from our end.

## Q: That frankly sounds like a support nightmare.

A: It's [pause] interesting at times. [Chuckles.] We won't move to Windows 2000 as fast as we'd like, but it's not just a compatibility issue. . . This just isn't the year for Windows 2000 because nobody wants to take the risks of early adoption. Right now, there are too many hugs and too few people who can do the migrations.

The Windows 2000 migra-tion will take 80 to 125 informatioo technology workers, augmeeted with a lot of consultants. We're going to use consultants in many cases because we simply can't find people who've completed the training we need in Windows 2000.

## Q: Then when will you migrate?

& We're planning a full infra-structure rollout of Windows 2000 by QI oext year. That'll move 200 to 300 servers. Windows 2000 certainly will let you run a hybrid, heterogeneous network, but you lose a lot of the reasons you're migrating in the first place. We're the clients.

our most important applica- the standard office software difference.

tions now are based in Oracle | that will be more of a problem or the Web, so compatibility Information technology manager dath Kwisch has added a we roll out Windows 2000 on which the selded a we roll out Windows 2000 on which we will not well out windows 2000 on which we will not window 2000 on which we will not will not window 2000 on which we will not window 2000 on which we

One tip I can give anyon



# **Consumers Worried by Algorithm to Forge Smart Cards**

Bancaires in Paris revealed that a known prench smart-card users were in an op-roar last week after officials at French cards for certain transactions.

interbank group Groupement des Cartes The algorithm, which was posted

was developed three years are by Serge Humpich, a computer cracker who was given a 10-month suspended scotence by a French court for illegally accessing Cartes Bancaires' data processing system, introducing data into the system and counterfeit-

ing five bank cards.

Reassurances Offered Humpich has predicted that forgers will be turning But Herve de Lacotte, a con be used to crea spokesman for Cartes Ban-forgod smart cards

caires, told Reuters that while forged bank cards could be used to buy train tickets and pay at parking meters or toll booths, they can't be used to withdraw cash or purchase expensive

Such assurances have done little to quell the concerns of consumers in France, where 34 million bank cards contain embedded chips that are used to conduct everyday financial business. perform national health care transactions and make phone payments. But smart-card vendors are trying

to calm the fears the algorithm has personnel.

provoked. "It was oot the French smart card that was hacked; it was the French banking-card system that was potentially impacted," said a spokes-woman for France-based Gemplus Corp., which has issued 450 million of the world's 900 million smart cards "The information that was published by the backer was oot coming from the card and cannot be reused in other

applications. Passions surrocodice bank card security have run so high in France that Roland Moreno, the inventor of France's smart cards. has offered 1 million francs to anyone who can crack a

card's security code. "This is simulation, oot penetration," Moreno told Europe 1 radio. "Chip cards remain secure. Smart cards are far less com used in the U.S., where they are pri-

marily used as network autheotication devices for secure scenes to computer Microsoft Corp. announced last year that it would begin selling software for Windows smart cards, which autho-

rize access to corporate networks. The U.S. Navy is also about to launch an extensive smart-card program for its

FedEx will use the internet to provide towers and trading partners with cost-o

# TAC Systems Unveils **New Archiving Product**

TAC Systems in Hentrelle, Ale., has intro-duced the LAMBed ArchivoTurio, its lotes addition to the LAMBed Turks line of archiing and digital-video-disc- and CD-mirroring network-attached storage products. ArchiveTorbo offers coline hard-disk

scarrood images, Bustrated parts catalogs and service manuals. File sharing can be d

across multiple pistferms, such as Unix, Lin and Windows SS, SS and NT. Archive Turbe is available in standard, pertable and as rabytes. Pricing bugins at \$5,034 for 506 TAC Systems is a division of Otax Inc., als

New MTI Group Offers

Storage Management

# Avnet Computer Upgrades SDSM Software Utility

o Manager (SDSM) software utility. Fea-res of SDSM Version 3.7 include the abil rerks, tape resource sharing and notrk-free rapid recovery. Pricing inform an'i disclosed. Temps, Artz.-based Arm Computer is a technology pr www.gynetcomputer.com

# Global Logistics to Develop Software for FedFx

gies Inc. (8-Log) has ann nest to develop elect rare for Memphis-based Federal Expr

stional carriers and shipme pel as a unified global loais

# TECHNOLOGY

# Wireless BlackBerry Service Winning Over Customers

Although it's just a year old, the Black-Berry wireless e-mail service and terminal are already providing benefits for a oumber of corporate users, ranging

from brokerage houses to attorneys. Many other wireless e-mail services | large oumbers since its introduction in require that users

have a separate e-mail address for the wireless device, but Black-Berry allows wireless users to main tain a single e-mail address

The service and terminal from Research In Motion Inc. (RIM) in Wa- AMERICA ONLINE terioo, Ontario, is plans to use the BlackBerry service being resold by

Compaq Computer Corp. America Online Inc. plans to use the BlackBerry service as part of its consumer service. RIM also lets users top into desktop e-mail systems, through partnership agreements with Internet service providers such as OoeMain.com Inc. in Reston, Va., which has 200,000 subscribers. Lease of the device and unlim-

\$40 per month for each user While the Palm VII from Santa Clara.

Calif-based Palm Inc. offers similar wireless e-mail connectivity, corporate users bave deployed BlackBerry in

services firm Salomoo Smith Barney Holdings Inc. in New York plans to equip 2.500 employees with the BlackBerry service and RIM 950 termioals. Wireless provider American

Mobile Inc. in Reston, Va., plans to deniov a RIM 850 device - though

not the BlackBerry service - throughout its network. RIM's market could include more than 20 million Lotus Notes users through a partnership with IBM. Law firm Paul, Hastings, lanofsky & Walker LLP in Los Angeles provided 350 of its attorneys with the BlackBerry service last year. "It was the best thing I did all last year," said CIO Mary Odson.

age capacity, usage and perform cal Network Appliance file system As part of the agreement, Network Ag

ance made an equity investment of an undis ed amount in HighBround, which recei \$30 million in recent fin agement products for Windows NT, Unix, Linux and Microsoft Exchange, Network Appliance offers network file serving and

www.hipheround.com www.netapp.com

# ta storage servers and provides consultion CNT Appoints Schmit CIO

The new group will be based in Starling, Va. According to MTI, the federal governmen

than \$8 billion. MTI develops enterpr

ement market is valued at

rmeapolis-based Computer Metwork Tech logy Corp. last week named Berbera Sch ts CIO. Schmit will oversee the company's of network infrastructure, plobal telecme systems, desktop services and ness application services group. Comput ork Technology provides storage-area

# HighGround to Partner With Network Appliance

and Network Appliance Inc. in Se Calif., last week arrecureed a partnership to er automated storage capacity, usage and rformance monitoring products for net-

HighGround will integrate its Storage Re-nurce Manager (SRM) with Hetwork Appli ance's filers. This will allow SRM to automa

# Six Firms Join to Launch Fiber-Ontic Cable Company

les have joined forces to create a York to Chicage.

The new year gy Inc. in Hagerstown, Md.: FirstEnergy Corp. in Akron, Ohio; and GPU Inc. in Me unications inc. in Dairville, Va., and CFW Communications Co. in Waynes The venture has formed a 7,000-mile not

work designed primarily for local and long-distance phone companies, wireless comm

For example, she said, during a recent

wanted to check a document that a wit ness mentioned. The lawyer made a quick call buck to the office and had the document cut and pasted into an e-mail and sent to the BlackBerry terminal to prove that the witness' memory didn't deposition, a Paul, Hastings lawyer match the document. Odson said b



VP of letermation Services.

Microsoft Where do you want to go today?

# Hello 'Little Black Book.' Goodbye IPX

Week 3: Pat checks out his ISP and plugs a security gap by - duh! - calling tech support

door to my lab. I nearly cried when I saw the museum pieces I was going to have to deal with. Granted, I have one 200-MHz Pentium with 128MB of RAM for my firewall, but the others are Pentium 133e with 64MB of PAM The products I am testing, Internet Security Systems Inc.'s RealSecure and Network Ice Corp.'s IcePac, require a 300-MHz Pentium II and 128MR of RAM Real-Secure wouldn't even install! Luckily. my boss listened to my needs, and I

am getting three new Pentium IIIs. A circuit board on our Internet service provider's (ISP) Cisco Systems Inc. Catalyst 7500 blew out, so we were down for M minutes. Our ISP replaced the board immediately. Of course, it belps when you know two of the tech guys extremely well. The boards have approximately 12 ports on them, so we weren't the only ones who had their Internet service interrupted. I took the opportunity to meet our ISP sales rep, and he invited us to see the network operations center (NOC). The ISP just finished construction of a new

co-location facility that blew our team away. We were also able to view our DS3 from our ISP's perspective. The point-of-presence (POP) was really an incredible site. The cables were all color-coded - blue for Tl. vellow for T3, gray for 10M bit/sec. and purple for

100M bit/sec. end visiting your ISP. Your business is completely dependent on your provider; you might want to make sure you have a friend in the right spot when and if something happens.

There was another network outser this week, this time at one of our warebouses. They have a mixed environment of PCs that connect back to our Windows NT domain and dumb terminais that connect to a Data General Unix server in Chicago. The call I got said they took a power hit and some people had connectivity and others did not. It

HEN I OPENED the | turns out that the DG box that serves the terminals and connects to the Unix server bad come up before the router did, so the terminals couldn't find the route to the server, because the router hadn't established the route. That was an easy fix.

An interesting situation arose during that fix. One of the server administra tors didn't know the topology of the site and thus had a hard time doing any preliminary troubleshooting. My boss the octwork architect, hadn't come in yet, and he's the only one who has that data. We decided to make the topology available to administrators as a little

black book. I sensed this was a great opportunity to been testing my policy-making ability. After all, data about network topology is sensitive, proprietary information. It includes our entire global network structure. both physical and logical, including IP assignments and phone numbers for Security mission-critical contacts. I set up a meeting with the director of network ser-Manager's vices, two lawvers from our legal department and my boss to discuss how the Journal

policy should be written

and implemented before One of my ideas is that if there is any change that needs to be made, everyone must bring their books in to be undated on the day specified - no exceptions! This would let us destroy the old information and keep track of the books.

## Plenty of Porn

I was in the NOC, and one of the peradmins said he tried to follow a link to register an Internet domain and it took him to a porn site. I thought that was weird only because we use Websense for FireWall-I to filter out those types of sites. When I looked further, it seemed as though Websense was acting like the trial version and had ex-

piped. Not good. I knew we had purchased a license for the full product, so I called Websense's technical support people. They

had me delete the corrupt database of Web sites and apply the new license key. I then stopped and restarted the service and tested it by trying to go to all the norm sites I could find. It worked The next day, the director of network services thanked me for fixing a situation that hadn't been resolved by the previous security officer. All I did was call the technical support people, who sot me up and running in two minutes. The next day I took a Windows 2000 file and print server class that proved to be very useful. I am going to take as

many Windows 2000 classes as I can; it

# is an entirely different beast from NT.

The class coincided with a preliminary meeting I had with our CIO and chief e-commerce officer to discuss a possible global intranet or corporate portal site. They feel that it will be a soap to set up and that it should be ready in May, Well, not so fast, I said: our programmers just got off the learning curve of developing 32-bit applications and Web apps from old Cobol and Visual Basic 4 applications that still run in 16-bit mode! But we'll be going ahead anyway. "Business necessity,"

To handle the encryption and security management for this global intrapet. we are deploying Windows 2000 with Active Directory. We will take the time to configure our domain structure and organizational units on a logical level, and, at the same time, we will have to consider the hardware. The domain controllers in Windows 2000 run similar threads to Exchange 5.5 and SQL Server, so with Active Directory we will need a lot more borsepower.

Instead of desktop servers with miced up RAM, we are looking at dual to quad processors, a dual to triple SCSI channel and I to 2GB of PAM Mon ment wants to move to more of a Web based environment, so we are looking for a new operating system. Since we're a straight NT shop, we might be mov ing from Windows 95 to Windows 2000, or we might stay with 95 and use 2000 Terminal Server to provide the This weekend, I plan to rip IPX and

several other services out of the firewall. I will also test the anti-IP-spoofing feature of FireWall-I in the lab, since the previous team couldn't get it to work. We have an internal network, a demiliarized zone (DMZ) and then the

# THISWEEK'SGLOSSARY

(44 7M byte/sec.).

. Topology: The pattern of interconnec-

- Domain controller: The server that contains the list of users, resources and stionships to each other in Window NT. There are two types in NT: a primary domain controller (PDC) and a backup domain controller (BDC), A Windows NT net work can contain only one PDC but can have as many BDCs as necessary

Domain structure: Amap of the relationships between users and resources stations, servers and network equip-Internet Packet Exchange (IPX): A

route messages from one node to another

# LINKS:

enmersion training in areas such as intrusion detection; frewalls and permeter protection;

and Unix, Linux and Windows NT security www.sans.org/newfook/publications incident\_handling.htm: The SANS inst-tute's guide to handling computer security

Internet. The configuration on the DMZ is what makes me nervous, since it is a separate valid Class C network from the Internet Class B petwork. If you have any suggestions, send them to pat\_rabbitiski@hushmail.com or visit our new security forum at www.computerworld.com/sif. Until next week, remember. The safest way to secure a network is to unplug it!)

This journal is written by a real security engineer whose name and employer have been disguised for obvious reasons It's posted weekly at www.sans.org and www.computerworld.com to help you and our security manager - let's call him Put - better solve your security problems. Contact him with commer advice at pat\_rabbinski@hushmail.com

with the subject line Pat's Journal.

# **TECHNOLOGY**QUICKSTUDY

# Authentication

Do you beong here? What rights do VOU have? And how do I know you're who you say you are? Those are the essential questions that any effective security system must answer before a user can access a computer system, network or other protected resource. We think this is what a password system

does, but passwords are only

one part of an effective secur-

ity system. That security sys-

tem requires three separate el-

ements - identification, authentication and authorization that together make up what's called access control. When you log into a computer or network the first thing you're asked for is a user name or account name. But a user name offers little protection to the system. Therefore, system also usually ots you for a password, a

# form of authentication.

The question, "How do I know you're who you say you are?," is in many ways, the most important one. Unless it's answered satisfactorily, identification is incomplete and no authorization can or should take place. But how does a system verify that a user is who he says he is? Simply entering your password doesn't prove

it's you. Someone else could know your password The answer lies in a strong authentication process. Basi cally, the following three factors can be used to authenti-

cate an individualmothing the user knows. This is a reusable password, passphrase, personal identification number or a fact likely to be known only to the user, such as his mother's maiden name.

mething the user has. This could be a key, a magneticstripe card, a smart card or a specialized authentication device (called a token) that generates a one-time pass or a specific response to a DEFINITION

Authentication is the process through which the identity of a computer or network user is verified; it's the system that ensures that an individual is, in fact, who he claims to be. It's distinct from identification - determining whether an individual is known to the system and from authorization - granting the user access to specific system resources based on his identity.

challenge presented by the 3. Something the user is. This depends on some inherent physi-

cal trait or characteristic, Often called biometrics, examples of this form of authentication include: fingerprints, retinal (eye) patterns, hand geometry, voice recognition, facial recognition, typing pattern recognition and signature dynamics (speed and pressure, not just the outline) For more on biometrics, see "Give Your Computer the Finger" on page 78.

These authentication factors are listed here from weakest to strongest as determined by how difficult they are to forge or fake. By themselves, each of these methods offers some security. However, each has its own problems or weaknesses. Anyone can enter a pass word and, historically reusable passwords have been vulnera-

ble to guessing, brute force and dictionary-based attacks. The second means of authentication - something the user has - requires the user to possess an often difficult-towho shouldn't be authenticat-

replicate device However this stronger protection also costs more (typically tens of dollars per device), and it requires contingency procedures in case a device is left at home. lost or stolen.

The third type of authentication - something the user is is the most difficult to defeat but it has other problems. Biometric identification methods are subject to two types of errors: false positives and false negatives. The first erroneously authenticates an individual vidual who should be authenti cated. Neither error is desirable, and it's important to know and verify error rates when considering such a system. Another problem is that per manent physical changes or temporary ailments or accidents can alter or render un readable the measured characteristic. If you cut part of your fingertip, you've changed what the fingerprint reader sees. Put on a Band-Aid, and the reader

ed; the second denies an indi

can't see the fingerprint at all. Finally, if the method is compromised there's no way to give an individual a new identifying characteristic. You can issue a new password or secu rity token, but you can't change

his fingerprints or eve pattern.

Two-Factor Authenticati For greatly increased secu ity, the approach preferred by

experts is to use two of the three methods in combination - a process called two-factor authentication. For example, to use a security token that gener ates a one-time password, you may need to enter a personal ntification number into the token itself. Similarly, a card key can be used in combina

tion with a biometric system. This is essentially what hap pens when you check in at an airport ticket counter. You hand over your ticket, which identifies you. Then you show a photo ID of some kind. This is something you have with you, and it's biometric (so thing you are) in that the clerk has to determine that the photo on the card matches you

Once a user has been identified and authenticated, what remains is to grant him access to whatever specific system reirces have been approved This authorization is pough accomplished by looking up that user's entry in an access control list that delineates specific rights and permissions These can be based, amo other things, on an individual's identity or job function, membership in a workgroup or other classification or time of day or day of week.

# **Authentication via Security Token**



that shows a string of our ed to be for that user at that p

# Challenge-Response Systems

# Give Your Computer ne Finger

Do you secretly suspect that after they made you they broke the mold? According to the nine biometric security products we tested. you're right. By Howard Millman

need better than a password system can give you, it may be time to consider using a biometric authentication device. In our tests, these devices proved affordable, reliable, easy to use and light-years ahead of passwords in boosting desktop, laptop and network

access protection. Not only are passwords easilv compromised, they don't authenticate people - they merely authenticate pass-words. Conversely, each fingerprint is unique. With biometrics, you'll never have to remember multiple, sometimes counterintuitive alphanumeric sequences. All you need to remember is to bring your finger or face, or how to

Biometric devices measure one or more physical attributes. The most commonly used attribute is your fingerprint, but it can also be the shape of your face, the puttern of your eye's iris, your signature or the sound of your voice. Devices exist to meet any degree of security and puranoia. For example, if you want ultrasecure access to the ICBM

missile silo or an anthrax lab,

sign your name

retinal-scan devices that read the pattern of blood vessels in side eyes are available. We confined our tests to noninvasive devices suited for use with computers and petworks in a normal business environment. "Biometrics have been

around a long time while the vendors tried to get the technology and price right. Finally, fingerprint scanners are a hereand-now technology," says Chris Christensen, a security analyst at International Data Corp. in Framingham, Mass. Starting this summer, manufacturers like Compaq Computer Corp. will ship laptops equipped with

biometric devices. With prices dropping and accuracy increasing, the future looks promising for vendors. According to New York-based consulting firm International Biometric Group LLC, the market for biometric devices totaled \$260 million last year. The company predicts a 30% to 40% annual growth rate.

All the products we tested are ready for use and were designed for existing machines The devices cost between \$60 and \$395 and offer vastly increased security. All products were installed effortlessly, required no maintenance and delivered consistent accuracy. Digital Persona Inc's U.are.U scanner into a keyboard. The Sunnyvale, Colif.

Pro offers a major advantage over the other products - a single cable connection to the Universal Serial Bus (USB) port in machines running Windows 95/98, NT and 2000. The other devices require a connection to the parallel port, a power source (usually the keyboard connector cable) and a printer passthrough when a printer is connected to the same machine. Aside from the convenience

of a USB connector, hardware from the other vendors performed equally well. When used on a Windows NT network and integrated into NT's Security Access Manager, all the devices provided security far superior to a mere password Biometric vendors tend to

sell either just the software engine, such as Identix Inc.'s Bio-Logon and Cyber-SIGN Inc.'s Cyber-SIGN, or the hardware, such as products from SCM Microsystems Inc. and Interlink Electronics Inc. Others vendors, such as Keyware Technologies and Digital Per-

sona, offer both. Other than Digital's Persona's custom-developed USB driver for Windows NT, we found no major differences in the ease of use, reliability or feature set in any of the software. All the vendors mentioned plan to release USB versions of their products for Windows 2000.

For information technology use, the device chosen should be based as much on price as on desktop space. Most fingerprint scanners and signature readers are stand-alone devices, but Key Tronic Corp.'s Key Tronic Secure Keyboard integrates a

bundling saves space, and help desks may prefer built-in devices to those added on. Since pressing a finger is slightly easier than writing your signature or mugging it up for a camera, fingerprint scanners have a slight edge in usability. All devices also allow password entry in the event that the biometric recognition fails, perhaps as the result of an

accident or illness. To help

prevent erroneous access denials, authorized users should register multiple fineers. Millman operates Data System Services LLC, a consultancy in Croton, N.Y. Contact him at hmillman@ibm.net.

## Uare UPm

Digital Persona Inc. Redwood City, Calif. www.digitalpersona.com (650) 262-6020 \$199 with client software Server software: \$29 per user



# **BioTouch**

SCM Microsystems Inc. Los Gatos, Calif. (408) 370-4888

# BioLogon 2.02

(408) 731-2000 www.identix.com Server: \$900 for 25 users

Client \$40

welcome and convenient innove m, the Bir Yough delivers afford-Ingerprint-scan sensor on a slide out tray. Powered by the laptop, it ray, Powerted by the lageou, if we no external cables or con-one. Simple, reliable and cor-rity accurate, it's an ideal way trollt existing laptops running true 95/98, HT or 2000.

Unite passwords, the BioTouci can't be defeated by simply remo-ing the CMOS battery or by ama-teurish hacking. When connected top will use the security profiles

set up for the network server. The software engine for the eTouch (and a variety of other fin rint-scanning hardware), Bio-in offers centralized network

Hardware Interlink Electronics Inc. Camarillo, Calif. (800) 340-1331

# Cyber-SIGN

Cyber-SIGN Inc. San lose

www.cybersign.com (800) 876-4605

\$50 per user Server: \$1.250, unlimited users

opact signature pad that's easy tall and use. Cyber-SiON's are analyzes the shape, speed, o, pen pressure and tirring inon as you sign your name.

# Key Tronic Secure Keyboard

Uses BioLogen set

Key Tronic Corp. Spokane, Wash. \$150



We give high marks to the Key Tron-ic keyboard for its consistent accu-racy and high reliability. And as an integrated keyboard and fingerprint scanner, it doesn't increase desktop clutter. The 104-key keyboard offers good tactile feedback and looks like any other, except for the addition of

Uses BioLogon softw Los Gatos, Calif.

Datawise MT Digit

(408) 370-4888

\$130

Keyware Technologies Woburn, Mass. (78I) 933-13II www.keyware.com

\$395.95

all three at ence, two at a time or any

own one or more of the devices. We ted parallel port versions of the

# TouchPass

NEC Technologies Inc.

Arlington, Va. www.nectech.com/afis/pid (703) 247-8900 Server: \$1,000, unlimited users Client: \$200, includes hardware



# MOREONLINE



# Don't Hide the Goods

When designing an e-commerce site, make sure customers can see the stuff you're selling. By Mathew Schwartz ONTENT MAY BE KING, but for retail sites, it doesn't pay the bills. Online retail start-up Foodoc.com Inc. learned to surround its products with relevant content, rather than the other way around. Another

than the other way around. Another thing the company learned as it redesigned its site: Build an architecture that makes it easy to change,

## because you'll always be reinventing yourself. Lesson 1: If You're Gonna Sell, Sell

Arlington, Va-based Foofoncom launched its community site for 'the fun and finer things in life' last July. The business proposition was simple: The site licenses content from high-end magazines such as GQ. Vien-iy Fair and Elle, then packages the content to do what the publications usually work: use the stories to bla-

tently sell products.

But consumers weren't buying the 
'content begets saler's labick. They 
would click on section titles and read the stories but 
not click on the accompanying product links. Testing 
sales,' rather than as a place to buy products, says 
"things harden, Bodioconson director of commerce."

Things harden, Bodioconson director of commerce. 
Some of the sales of the sales of the sales 
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foo.com licensed was preventing it from making sales. To drive users to the products, Hawken inverted the overall approach. Instead of placing links to products in a separate sbopping area next to article, he gave the products more prominent placement and surrounded them with links to relevant articles. The separate shopping area that so confused users was eliminated and shopping was integrated into the whole site. Links to the customer's shopping cart and account information were added to the home page to reinforce the impression that, yet, his was a commerce site. User testing also indicated that the 40 to 50 products normally seen on a page were visually overwhelming and slowed download times to unac-

overwhelming and slowed download times to unacceptable levels. So Hawken allowed only six products on any one page.

Users responded. Product sales have risen from

15% to 20% of overall reveoue to 25% to 30%, which is closer to the 50% the Foofoo.com business plan calls for So far, so good — product sales have already increased about 50%

since the redesign.
Another important change involved axing, renaming or consolidating 10 states year. Another important change involved axing, renaming or consolidating 10 states year. See the state of the state

relate to the new sections better," says Hawken. Lesson 2: Plan to Rebuild

Serving up the right mix of content and products and figuring out how to package it all is a never-ending experiment. So Foofsoc. on launched with a site architecture that could be changed constantly. The company opened for Microsoft Ses Server, with all pages fed from a SQI, Server database running on Windows NT. Templates pull content from the database and mix it with such things as background color, graphics and relevant articles. "Valing templates"

Buffing Up a High-End Online Retailer

made the redesion a lot easier. This is a major re design of the site, and we did a furious reshuffling of how the pages are designed," says Hawken. Because the Microsoft Active Server Pages are dynamically served, changing the look of the site doesn't affect the back-end systems. Also, every product is tied to a specific department identification number. Using the netAnalysis tool from Cambridge, Mass.-based netGenesis Corp., Foofoo.com

have codes attached to them, site redesigns don't make it harder to see historical sales information. Templates also make it easy to add new content. When a page is dynamically served, the database is referenced for the most relevant articles for the products mentioned on that page. So new articles have to only be added to the database, not designed into a new page. A range of custom Web administration tools makes managers responsible for main-

taining their own sections. The higher the level of automation says Hawken the less redesign most be dealt with daily. "If history tells me anything, in four months we'll do it again," says Hawken. "Until then, there are other things to focus on."

## Foofpo.com Inc.

Location: 2700 South Quincy St., Suite 320 Arlangton, Va. 22206

nue model: Adver troing and sponsorships account for 70% to 75% of revenue. Plan calls for oduct purchases to be 50% of revenue as soon los: 55% male, 45%

lemale; 50% single or

TECHNOLOGY USED

he about 70 partners

ck-end systems rosoft Site Server

from SQL Senior database

red median income \$100,000 average age: 33

rder servicing and sta etion: OrderTead Inc. an

order-fulfillment outsourcing

er Virtual handled

Web: www.foofoo.com

BUSINESS DETAILS Company started: January 1999: Web ste inunch July 1999, now on Version 3

online community for the fun and finer things in Me," using content to drive

and count: 13 on staff

with three employees desig nated for site redesign work

shopping section. So in the current version (bottom), Foofoo integrated shopping throughout the site and gave vague section titles a more action-oriented spin - for example, "Concierge" became "Entertain." tracks every query made on a product, so it can see \_\_\_\_\_ not only how many times a product was viewed, but also how many units were sold. Because products



Foofoo.com's site logs showed that users were reading the content but not taking the bait and buying products

mentioned in the articles. Problems in the earlier version (top) included vague section titles and an isolated

ent throughout the site mes users had to go back to the home page to get these navigating policies.

brand required users to click to uncover the site's purpose.

FOOD&WINE

Vague name for travel section. Like other sections, the title a noun - didn'i drive users to act.

Section names we enfowerd: What did Connoesseur contant Destinations, for instance, was simply

renamed Travel in the new version. Ten differ ent categories and 10 to 15 promotions at any men time on the home page overwhelmed users.

used exposure to prod

which draws revenue vosteed of eaplain Factor

lew tag line

ible real estate: Products with a home page promotion get three times as many page views as other products - and they sell more than twice as much.

users to rally sorie solidated or elimi nated, based on which

products sold well and which category titles Furthermore, static section tilles were been replaced by to down users to achi

they and portr still account for 70%

ndancy is good

Content sections now fur

ther define which proconsumers can find in each

# Tools to store and manage data top IT managers' spending plans this year, according to a *Computerworld* survey. By Cynthia Morgan

NTERPRISE DATABASES and storagearea networks (SAN) are the two most crucial buying decisions facing information technology managers this year, according to an exclusive Computerworld survey.

Other priorities this year, ranked in order according to the number of times they were cited by survey respondents, include replacing older desktop PCs, providing high-specd Internet access for telecommuters, implementing security and managing Web content. Computers world surveyed 221 IT managers who

plan to acquire technology products this year and asked them to name the three most important purchasing decisions they'll make. Those surveyed support an average of 3,578 users

at an average of 62 sites and have an average IT budget this year of \$16.7 million. Enterprise database projects topped nearly everyone's list. Respondents say they need database appli-

cations that can scale dramatically, function as part of e-commerce sites with ease and support capabilities that may not have existed a decade ago.

of e-commerce sites with ease and support capabilities that may not have existed a decade ago. Rochester Gas and Electric Corp. (RG&E), for example, is considering upgrading its existing databases this year to better support a planned geographic information system (GIS), says Paul Ruganis, vice

# president of information services. People and Pipelines

The Rochester, N.Y.-based utility will use GIS technology to help track personnel and equipment. "We have a substantial network of gas and electric pipe and wire facilities and a very mobile workforce," says Raganis. "Now that Y2k is behind us, we can concen-

trate on finding better ways to allocate that workforce and manage data for customer support." Ten years ago, an ice storm wreaked havoc with RG&E's data systems. Finding no single commercial software package that could cope with its wide-ranging demands, the utility built its own Sybase Inc. applications that interface with a combination of IBM DB2, Saga Software Inc. and Microsoft Corp. SQI. Server database applications. Now the company needs to trim down to one database elatform that

needs to trim down to one database platform that can scale to levels unheard of a decade ago. "This is a major, major undertaking that will take 25 to 30 months and come in north of the \$10 million

level," says Ruganis.

Corporate data keeps growing and must be stored somewhere. So SAN purchasing decisions made the second soot on the list of IT spending trends.

As more companies try to enable their network infrastructure for e-commerce, they're finding thenselves with data management problems land load balancing issues, and they move into an area that is pretty unmanageable without something like a SAN, says Jon Kronick, an IT manager at Purdue Pharma IP, a charmsecuticals company in Norwalk. Conn.

## Scalability, Performance

Purdue Pharma will be choosing SAN vendors and components within the next three months and will hase its decisions on products' scalability, performance and ability to support net-

work-attached storage, Kronick says.
Those factors are also important to
Shahri Moin, manager of information
systems and technology at IntraNet
Inc., a Newton, Mass.-based company that builds

electronic-payment systems.

Moin's group will start small with its SAN, a system from Sunnyvale, Calif-based Network Applian
Inc. that will support 60GB at first and grow as its

capabilities are proved.

"Cost and reliability were very important considerations for us," he says, "but even more important

# IT Spending Tree Data is Ki

# TECHNOLOGY

was Network Appliance: multiplatform support IntraNet has taken a do-it-poursel approach to replacing deskup (Co., the third-bottest item on IT shopping lists this year. Monit's team assembles its own PCs using top line motherboards and components, currently building 300-MHz systems based on ochisjis from Sumyaria-based Advanced Micro Devices Inc. The PCs have 128MB of RAM, 100B hard drives and 50-page of D-ROMS. They cost about

arrives and 30-speed CD-ROMS. They cost about \$500 apiece, not including the inounior. "Similar systems from Dell or IBM would cost us \$1,000," Moin says. "It takes us 15 minutes to put one together, and we're able to control quality, reliability.

and maintenance that way."

Quality control and reliability were a common thread among survey participants. All of them said a vendor's reputation for reliability was an important factor in choosing a system, as was the quality of support after the sale.

Data management via the Internet tagging language XML may turn out to be the answer to "the biggest question I have this year: What is B-0-B2" says Jay Lender at Nypro Inc. "But then, of course, I have to ask the question, "What's XML?" And I doo't

have the answer to that one—yet."

Hight now, we're creating personalized extranets for our customers to give them order information and share critical knowledge between engineers, says Leader, the director of application development at the Cliston, Mass-based manufacturer of hipperintensional control of the Cliston, Mass-based manufacturer of hipperintensional control of the Cliston, Mass-based manufacturer of hipperintensional control of the Cliston of the Cliston

But Leader says his team faces a oumber of obstacles: "Let's say we settle on a DTD (document type definition) for the plastics industry. Now we can talk to other people doing XML for plastics. But we sell to customers in health care and PC manufacturing; how do we integrate with their industry DTDs? That problem makes Univis standards look like a pirche."

## Fast Remain Access

Supporting telecommuters with high-speed Internet access such as cable modem or Digital Subscriber Line connections was the fourth most

scriber Line connections was the fourth most frequently mentioned item on the list of survey respondents' purchasing priorities. Several managers say the scarcity of qualified pro-

grammers, support technicians and network administrators has been pushing all forms of telecommuting op the priority lists.

Problems involved with connecting securely and cost-effectively with telecommuters, satellite offices and overseas facilities have boosted reliance on con-

and overseas facilities have boosted reliance on connecting via the Internet through virtual privace nettwork (VPN) technology at Nypro, says Leader. "We're trying to do a global VPN right now, and it'n en easy," he says. "The U.S. is a layup; anyone can get connected here if they have enough money.

bes doing it effectively in Europe, Children's Mosein America, where the local providers may be a fine and the state of the control of the state of the mose that will occupy hypor for the green that vill occupy hypor for the green that VPNs will be a to topic. VPNs. (Freevalle, PKI [public-lev | Infrastructure] — anything security will be blow, blog, blog blog for such years, the says. With a seure VPN, for example, our employees in China don't have to know much to set up a secure very.

## Security Is Another Priority

Security is a chart-topper this year for Ruganis at RCicle. "We have home-baked curvor's security that will be updated this year," he says. "We're trying to decide between building it internally, outsourcing it or using commercial packages. Commercial security can have problems because everyone knows it. But what if the guy who builds your homegrown security gets hit by a buil."

Kronick's teams must cope with a mountain of federal regulations that mandate strict security procedures. In response, they're putting together a sophisticated PKI network that will safeguard a network of 3,400 users at 25 sizes worldwide, using a fingerprintbased authentication system and smart cards.

Feedbase with the second of th

2000, no any. we to many just down 2000 to support our PKI system."

While it didn't appear on Computerworld's initial survey checklist, several respondents pointed out that localization of computer systems will become more important as the year progresses.

"You really can't demand that your overseas employees and customers speak, read and write perfect English," warns Leader, "The more we automate our systems, the more stuff we put on the Web, the more we'll have to supply it in local formats." 9

# Top IT Purchasing Decisions in 2000

The top 10 buying decisions IT managers will make this year

What do IT managers consider when investing in an enterprise database?

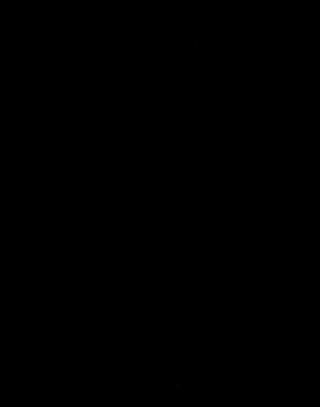
What do IT managers look for when choosing a SANY

What do IT spannagers both for subsphending dealing suphers and species

Microsoft which we are the contract

Based on an exclusive Computerworld survey of 223 IT managers who acquire technology for their organizations. More than one response was allowe participants were asked to name their three most critical perchasing decision





# TECHNOLOGY

was Network Appliances' multiplatform support." IntraNet has taken a do-it-yourself approach to replacing desktop PCs, the third-hottest item on FT shopping lists this year. Moin's team assembles its own PCs using top-line motherboards and components, currently building 500-MHz systems based on chips from Sunnyvale-based Advanced Micro Devices Inc. The PCs have 128MB of RAM, 10GB hard drives and 50-speed CD-ROMs. They cost about

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have the answer to that one - yet." "Right now, we're creating personalized extraners for our customers to vive them order information and share critical knowledge between engineers." says Leader, the director of application development at the Clinton, Mass.-based manufacturer of injection-molded plastic components, "We're being proactive, so we have the luxury of luring customers to our Web site to view information in our formats But pretty soon, they'll demand we come to their sites" or e-mail specific data in a specific format at a specific time, he adds. "XML gives us a way to do that relatively painlessly."

But Leader says his team faces a number of observcles: "Let's say we settle on a DTD idocument type definition! for the plastics industry. Now we can talk to other people doing XML for plastics. But we sell to customers in health care and PC manufacturin how do we integrate with their industry DTDs2 That problem makes Unix standards look like a picnic."

## Fast Remote Access

Supporting telecommuters with high-speed Internet access such as cable modem or Digital Subscriber Line connections was the fourth most

frequently mentioned item on the list of survey respondents' purchasing priorities. Several managers say the scarcity of qualified programmers, support technicians and network admin-

istrators has been pushing all forms of telecommuting up the priority lists Problems involved with connecting securely and cost-effectively with telecommuters, satellite offices and overseas facilities have boosted reliance on con-

necting via the Internet through virtual private network (VPN) technology at Nypro, says Leader. We're trying to do a global VPN right now and it's not easy," he says, "The U.S. is a layup; anyone can get connected here if they have enough money. But dring it effectively in Europe. China for | South America, where the local providers aren't that great

now that's a different proposition." And it's one that will occupy Nypro for the greater part of a year. Purdue Pharina's Kronick says he agrees that VPNs will be a hot topic. "VPNs, firewalls, PKI (pub lic-key infrastructure] - anything security will be big, big, big, big for us this year," he says, "With a secure VPN, for example, our employees in China don't have to know much to set up a secure connection."

## Security is Another Priority

Security is a chart-topper this year for Ruganis at RG&E. "We have home-baked network security that will be updated this year," he says, "We're trying to decide between building it internally, outsourcing it or using commercial packages. Commercial security can have problems because everyone knows it. But what if the guy who builds your homegrown security over his he a head

Kronick's teams must cope with a mountain of federal regulations that mandate strict security procedures. In response, they're putting together a sophisticated PKI network that will safeguard a network of 3,400 users at 25 sites worldwide, using a fingerprintbased authentication system and smart cards.

Finishing up a Windows 2000 deployment is the one thing that won't happen this year, Kronick says. Although his company fully intends to deploy the operating system early next year, right now it "inst has too many bugs and too few people who are skilled enough in Windows 2000 to do the work," he says And despite Microsoft's additions of Kerberus/PKI. smart cards and biometrics support to Windows 2000, he says, "We're having problems getting Windows 2000 to support our PKI system.

While it didn't appear on Computerworld's initial survey checklist, several respondents pointed out that localization of computer systems will become more important as the year progresses.

"You really can't demand that your overseas em ployees and customers speak, read and write perfect English," warms Leader, "The more we automate our systems, the mure stuff we put on the Web, the mote we'll have to supply it in local formats." 4

# Top IT Purchasing Decisions in 2000

# The top 10 buying decisions IT

managers will make this year		
DECISION - WHO INCLUDED IN	TOP THREE	
Enterprise distributes	85.7%	
Storage area naturalis	82.9%	
Dealtop replacement systems	77.7%	
High-speed between access for indecerrenate	m 68.2%	
Security	80.9%	
Visb content management	48.8%	
Web performance	41.3%	
Web-database remocibility	37.3%	
While area national behavious trackers	28.3%	
With nonemplostics took	-	

## ing in an enterprise datab

Danie phi	om susperi	GLP%
Soliday		50.0%
Alex .	STATE OF THE	84.4%
Performance.	Sec	48.2%
	Many with fallow Systems	41.0%
	den vilk legany systems	36.7%
helding of a	insispensi took	20.0%

# What do IT managers look for

DEC-SION	S WHO INCCUDED	IN TOP THREE
I specified the	squale behavior storage	\$8.0%
<b>Intelligence</b>	-	54.0%
Soldier '	A	40.7%
in plants		45,0%
Managements	delty desired.	37.9%

Market a coloring for reliable .	100.0%
Support for the chart and discharge	5.00
much as Cong Materiagns	-
Quality of sender property	81.0%
Paracteristicals relationary as tipport	65.0%.T
Long-first total cost of connecting	38.0% j
No Suppy shive (for estably parywors)	86.5%
Jos seport	45.9%
Purchase price	44.0%
Easy to apprade components	25.0%

Based on an exclusive Computerworld survey of 22311 managers who as gure technology for their organizations. More than one response was allowed porticipants were asked to name their there must critical purchases derivate

# TECHNOLOGYEMERGING COMPANIES

# How to Find Devices Without Guesswork

Visionael's product promises to help locate and manage numerous network devices

BY ANY MED EN HOMBOOM 's MONDAY: Do you know where your routers are? Can you really pinpoint the exact physical location of every device on your

network) If you can't, you mucht want to talk to Visionael Corp. The Palo Alto, Calif.-based compaby has a product that collects information about a network's hardware, how it's interconnected and what applications are running where. It could be everything you need to plan and maintain your corporate connectivity infrastructure.

Visionael's eponymous product, now at Versioo 51, is aimed at the information technology department's network designers and maintenance staff - the people who install and deploy the hardware, says CEO Marc Jones. Visionnel takes traffic data from widely used network management tools, like those from Austin, Texas-based Tivoli Systems Inc. It combines that data with a library of device-specific information so engineers can view both the logical and physical sides of network devices.

## etting a Picture of Assets

In the end, says Jones, companies get a complete picture of their petwork assets, which allows them to maximize the use of existing devices and bet-ter plan additions to and reor-

ganizations of the network. Visionael is appealing to IT shops that support large, comolex networks, says John Morency, executive vice president of consulting at high-tech industry observer Same Research Inc. in Natick, Mass. These IT departments are under pressure to produce a level of service quality that's mea surable and can be monitored. A product that can help boost network availability and performance is highly desirable. says Morency. Visionael's reporting features and automation address these key IT re-

quirements. One benefit is that it rescues support personnel from routine monitoring, freeing them to work on more proactive tasks, he says.

Morency also cites Visionael's scalability as a significant asset. "To provide this capability across tens of thousands of managed elements is not trivial." he explains. Plus, in order to be effective, the library of el-

include information on all the products and their features. Visionael's library allows it to flag important issues. For example, Morency says, one common network problem

is when a device is running an outdated software vertion Discovering this - a relatively straightforward asset problem - can be difficult with a net-

work monitoring product. Jones cites the product's collaboration and project management features as timesavers for network engineers.

# Visionael Corn.

ation: 410 Cambridge Ave Palo Milo Cult 94306

Telephone: (650) 470-8920 Web: www.usionsel.com The technology: Network hard

were asset management Why it's worth watching: Product helps with planning new ents and maximizing use of existing networks

Company officer: Marc Jones. president and CEO

• 1997: Company founded • January 2000: Acquired NetSuite Development Corp.

Employees: 100 Burn money: \$21 milion. nture Partners, GF Franty Capital Group, and Capital

Inc., AT&T Global Services, Convergent Communications Inc. Partners: Hewlett-Packard Co. Cabletron Systems Inc., IBM, Ora-cle Corp., Cisco Systems, Remedy Corp. Swhere inc. Red flags for IT: • Risk-averse IT departments will

Customers: The Chase Manhat

tan Corp., Lehman Brothers Hold-

menting Lucret Technologies

Communications

Visionael 51

want the reassurance of a brandname partner to guarantee the longevity of this system. . If one of the large netwo companies enters the market, Visioneel could be crushed. Outsourcing network functions

5,000 employees that have networks that are managed from multiple locations. Visionael's database can keep track of who is changing what device, so potential conflicts don't occur. Updates are sent over the network so everyone is informed about changes. **Device Library Expands** Visionael recently acquired

There are often clashes for re-

sources, he says, especially in

corporations with more than

Boston-based NetSuite Development Corp., a developer of network discovery and design software. Jooes says this will expand Visionael's device library and give It improved logical design capabilities to complement its current facilities for physical design.

Visionati Vice President Richard Zambuni says it's part of a push to win the big-fish position by the time the mass market for these products evolves. Although the playing field is fairly clear at the moment, lones says one potential problem be worries about is major players - such as current partners Cisco Systems Inc. or IBM - deciding to enter the game.

Morency agrees that those types of companies pose a serious threat. 'At the end of the day, it's really name recognimanagers or That leaves the door open for a respected networking company market. tion that's going to win [IT

emerging nerworking nerworking to enter the market. Companies That desire for brand-name security also factories ability to penetrate the large enterprises, which Jones targets as one of the company's sweet spots. Visionael's partnering

agreements with established network equipment vendors will be a valuable selling point, enabling the company to offer complete networking systems.

Morency says he sees an er threat to the company: businesses deciding to outsource their network management. If that happens, planning and nce tasks will shift outside the IT department to application service providers and Internet service providers, shrinking the customer base.

Johnson is a Computerworld contributing writer in Seattle. the buzz

## Fighting the Tried and True

One problem for Visionani's that IT departments like to stick with familiar names for their mission-critical products, says Sage Research's John Morency. This gives well-established IBM's Twoll division, Hewlett-Packard Co and Cabletron Systems inc. an advariage, even if they products' features don't compare directly. And there are a few refew products that Visionael needs to keep in mand says Movency

# Netcool

Micromuse Inc., See Freedisco www.micromuse.com Micromuse's Netcontempt of could one day compete with Visionael Right now. its capabilities include monitoring network events and proporting trouble spots, with a focus on providing looks for maintaining network availability.

## Spectrum Aprisma Management Technologies. Durbaro N.H.

www.aprism Aprisme is the new name for the September 1999 son-off of Cablescon that's devoted to selling the company's Spectrum line of software fools. The suite covers not only network management but also sustance and engle show

Opticoming, Andover, Mass. www.opticominc.com The Wew suite covers service leve and availability and has modules to capacity planning, asset tracking and date analysis. Morency says he praises Wew for its asset manage

# Visionael's Strengths

What Visionard has to sell is scale and knowledge management, Morency notes. In terms of workflow, airrost all the products are comparable. Also, thore's a lack of annowation and new products in this space; if Visioneel can sellits products as a step lowerd the future, it has an edge. One area where Vistonael is staking a claim is with what it calls "new wave service growders. Those are companies that offer IP ser vices that use bargeoning technologi like diotal subscriber line and longdistance liber. They need to grow these networks appressively and are more

corn to newconvers like Viscousi. Wa dows NT support is alway capab

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http://www.tantae.com.TANTAU/s Wireless Internet Platform enables companies to build, deploy and integrals applications for the writeless and wireld Web. Destroyments Reference Section Scholarges and settlement transactions of the properties of the build be propertied by the properties of the build be propertied to the properties of the properties of the properties are children of the core to offer mission critical scale, availability, branaction integrity and socialistics.

# Koac

Companies are going after remote and mobile computing with a vengeance, creating lots of opportunities for IT pros with the right skills. By Jill Vitiello

> WHEN THE PRUDENTIAL INSURance Company of America authorized a pilot project to equip 500 agents with IBM Think-Pads and technical training, a

sample group of agents within the pilot doubled its sales. Newark, N.J.-based Prudential then initiated one of the nation's largest rollouts of mobile and remote computing. Called LaunchPad, the effort involved providing all 12,000 agents. field management and support staff with customized laptops. instructor-led and computerbased training, technical support and a new infrastructure to

undergird the mobile system. LaunchPad has changed the way Prudential agents conduct business, despite some early skepticism that the laptops would become just expensive paperweights. "All arguments [against mobility] have dropped. and now everyone is asking for more mobility," says Chris Ludwig, vice president of field technology at Prudential.

Now, being ready for the road is all the rage at Prudential - and at other companies, too. Mobile and remote comput ing experts agree that the trend is taking off in interesting directions. According to Stamford. Conn.-based Gartner Group Inc., 40% of mobile users will adopt smart phones

- wireless phones enhanced | Colin D. Jones, a global prowith personal digital assistant and Web browsing features by 2004.

The Wireless Application Protocol will accelerate the adoption of wireless loternet access, creating a mobileing to Synchrologic Inc., a developer of Internet-based mobile computing software in Al-

pharetta, Ga. This explosion of mobile computing has prompted unexpected career growth for many information technology professionals.

## **Expanding Skill Sets** As agents became more technical, their questions to

the help desk became more complex, says Roy Schwartz, vice president of information systems at Prodential. To meet the demand, Prudential trained its help desk professionals in security, applications and Internet functions. The company also promoted the help desk director to vice

president, commensurate with the expanded responsibilities. Because of the widespread corporate usage of mobile and remote computing, IT professionals who implement and support it are often thrust into the limelight and gain opportu-

nities for additional training. East Brunswick, N.L. At PricewaterhouseCoopers,

Technologists can't get hung up on being elegant. It would be nice to have the perfect

technical solution, but most often, we have to be creative in solving the problem through a combination of technologies.



gram manager based in the U.K., is leading an international team of 20 IT professionals to create a virtual private pet-

work (VPN) for the firm Team members are "systems integrations people with good diagnostic abilities and knowledge of networking, firewalls and databases, plus the obvious soft skills of teamwork and

problem-solving," says Jones. The team has rolled out the VPN to the U.S., where approximately 25,000 consultants rely on remote access, logging I million hours of connection time in January alone.

"The IT pros who work on the VPN are very visible throughout the firm, and they've earned great street credibility," says Jones.

"Wireless is a hot field for digital and analog engineers who understand microelectronics, radio, multithreading and multiplexing," says Rich-ard Wonder, president of Richard Wonder and Associ-

ates Inc., a technical recruiting firm in New York He estimates that those with eogioeering credentials and five years of experience can

earn \$100,000 or more working for the "bicoastal wireless development companies."

Vitiello is a freelance writer in





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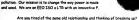
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# So where 's the best place to work?

...

Let's face it. In this labor market, the search for the most talented employees is a quest – most companies are seeking the same people. It's the IT professional's market – if you have the skills, passion and drive being sought.

So there you sit with three or four tremendous job offers. You'll look at them for what they have to offer you – in terms of the cool work you'll do, the kinds of projects and customers, and the types of people with whom you'll be spending your time. Here's a look at just some of the companies we've found who are focusing on these attributes, who are aggressively hiring, and what their information technology leaders think the future will bring.

# Amazon.com

Scattle, WA

Being among the leading companies for the next millennium is a simple equation for Rick Dalzell, Amazon.com's CtO. "I'd sum it up as our ability to offer an exciting challenge, to operate in an entirely new space and most importantly one that is extremely

to go and admity to writer an exturing unarlenge, to operate in an entirely new space and most importantly one that is extremely customer-focused and values really smart people."

Debrit's www. o pe of the rescript that Amazon con was listed in CIO Magazine's 100

Datrell's view is one of the reasons that Amazon com was listed in CIO Magazine's 10 Leaders for the Next Millermum, August 15, 1999.

"It's really very early in this industry." Dalzell says of unline commerce: "The problems we have faced have been so challenging, but there is so much left to do on the table." The focus at Amazon com is on how intriguing work can attract and bring people together. "We are about people." The docus are proposed to the document of the second comments are built on intellectual proports and on

their ability to hire and keep people who are inventors. Here at Anaxonic cont, we have a culture that enables individual accomplishment. This is a place where one person can make a difference. \*\*

Datest says the biggest difference at Anaxonic com today versus two years ago is scale and

Datest says the bigglest difference at Annacon com today versus two years algo is scale and scope. "Customers expect more today For the first time in history, they can have near perfect information through the Internet. The customers have raised the bair and it will only go higher."

While Dalzel is retocent to set specific projects that are under ways he spy. The challengereman "We'r seeing some important trends. The first is not community overy important. We're seeing a movement toward people helping people in a bigger way - than't kind of what the we'd does it allows you, in a hypertext land of way, to connect to anyone," he explain.

A second stend he case a ubequitous computing "fit's a real thing – people are going to be tasd to their technology all over the world in anything they are doing." he says. "This has a definite impact on how we will build the systems of the future and what we do that makes the customer's life easer."

If Amazon.com could change one thing about its IT operation, it would be to hire more software engineer. "We are only limited by our engineering ingeruity and bardwidth," says Dabell. "The speed at which our engineering team moves is pretty close to the speed of Amazon.com."

District sign that decide the rand growth at Ansaron core, the but for what requires to proper latent continuously more on "I their including for result, analysical properly properly size of the result of the size." The size of the result of the result of delivered a college of the chnology that excelled something or not it seems to be delivered as only exist of the chnology that excelled something or not it seems to be able to see or that require that you've excelled shouly your work citizally being used and that you by so seek out the most childlergraph problems.

Dabzell has a few tips for IT professionals as they pursue their careers. "Work with peopleyour registed and admine, just an your find to do in college by thosologing professions who was procurably admined." The says. "You need to work with people-you can learn from and who can help you extend who you are. The second thing is to work on things that are meaningful in an environment where you have the unaccompt to deliver."

Ne admits the one mistake he made in his caneer was staying too long. "There was a period where I went to work somewhere that accepted medicine work. It drove me out of my mind but it taught me a valuable lesson – don't stay too long where you don't admine or resourt the another or the misson."

in his work as CIO at Ameron.com. Dalzell believes his job is to set the course, here and place people and then set them up to succeed. "The biggest challenge is motivating and impering smart people, assuming that they believe what we're during is meaningful and that they have book poolbers to resolve.

"I was a fourteant in the Army and learned about (eachership firm a preat serpent the taught me to clear what populog exclusify do on the job, to respect them, to set clear expectations and to allow them to do their thing, "he adds: "That's what it try to do at if Amazon. Com: —let propiet territh and not writter for being in comfortable surnariation of differency, but have to take on it."

# Cabletron Systems

Among the top-selling points for any company is its ability to offer opportunity. Cabletron Systems' recent reorganization creating four independent operating com-

panies has definitely opened the door to still more opportunities. Creating new opportunities is one of the basic factors employees look for when determining their career moves, something reflected in Cabletron's ranking in Computerwoorld's 1999 100 Best Places to work in IT. The new operating companies include:



. Entertains Networks is focusing on providing e-commerce solutions to Global 2000.

. Reversione Networks is providing products and services to the service provider market

. Global Network: Rechnology Services is a network: consulting business, providing design management and security for complex network systems

. Aprisma Management Technologies delivers infrastructure management software to

The plan by Cableton is for the four processor come year to become four securities and lich traded companies. "The been fortunate enough to have managed many published no talented individuals who we accomplished much for the cause " says Henry Fiallo, now the head of Enterasys and formerly head of the technology group at Cabletron. We we always fined to add responsibility, provide training and career development. This new organization

Fullo wants to ensure that as he transitions to leading a start-up company that the IT organzation doesn't miss a beat "in terms of helping all four new corporations with their IT-related needs " It's a tall order, but Fiallo believes it's possible if the right people are in place

"This continues to be a candidate-driven marketolace to we have to get even more projective. about pursuing the passive job seekers who often are the most promising of all " the acids. "I think it's promising too that we're seeing more and more top level business leaders who have worked up through the technical ranks."

# Cabot Corp.

Luthers the effort "

Boston, MA

Attracting the most talented, smartest people is tough in this market, but it can be even tougher for organizations whose primary mission isn't Information technology. Cabot Corp. was named one of Computerworld's 199 100 Best Places to Work in IT. despite the fact

that the company is a specialty chemicals manufacturer with annual sales of more than \$1.6 billion. "We sell into more than 100 countries and have a physical presence in about 40," explains Craig Bickel, vice president and CIO.

This geographic reach is one of the primary reasons Cabot is enticing to IT professionals. The spetraity chemicals business itself is technologically advanced. "We basically have turned the company on its side and are becoming more intimate with our customers," says fickel. "To do so, we undertook a shared services initiative to support a global manufacturing organization and global logistics operation. To make this happen, we need to develop coherent global systems over the top of an extraordinarily diverse set of applications and data

The result is an intriguing set of technical challenges - from data warehousing to architecture to application development. "The need for these is coupled and creates serious tension as we deal with e-business," adds Bickel. "That's the direction we must move to provide organizational agility, address cost and achieve customer service and performance

Bicket believes Calbot has been able to attract and been talented IT professionals because "we've tried to build on integrey, innovation, respect and competitiveness," he says. "Within IT, we've given everyone a piece of the full problems or challenges we face. We're delayered and our jobs are broad. You don't come to Cabot as a programmer or analyst. That may be your area of expertise, but you will use a combination of skills to solve problems here. We don't want you to be limsted by your job. Instead, we want you to grow into it. We also work with employees to develop career plans and understand their needs. One thing that tells us we are on the right track is that folks who leave send to come back - they find idea kriling, form filling and limited job scopes and then come back here to use their brain and accomplish something good "

Cabot works hard to preserve the innovative and collaborative culture. "There have been moments of truth," Bickel says, pointing to the extensive diversity of cultures and working norms found within Cabot, "Because we are not an IT company, our approach, for instance, to e-commerce is 90 percent about commerce and 10 percent about technology. This points to the fact that we have transformed the IT professional at Cabot into a larger business role with more influence on how we sell to, distribute to and manage relationships with our customers.

As with Amazon com: Folig believes customers and their needs will determine the future That's always been more important to Cabletron than dreaming up some expticinew technology fad that doesn't get used. And generally our customers are talling us that it's not time to move beyond ERP and e-business just yet. There's still significant amounts of work to be done to fully integrate with corporate processes."

Fiallo has an advantage many CIOs never face - he is starting over again. "I have the chance to staff Enterasys with many people who worked for me at Cabletion. I want to preserve their talent, their drive, their knowledge, their creativity

As he looks for new hires, Fiallo says there has been one significant change: "A candidate's formal education - schools and degrees and number of years devoted to that - is a bit less of a key factor instead, I'm looking for core values and attributes - their integrity, their creativity, their drive, their curiosity," he explains. "Then I look at their skill set and what they know, but not until then. Skills are learning are almost irrelevant to me if their core atmbutes don't fix."

Similarly, Full o believes the role of the CIO has changed. "The CIO used to be exked to basically create and operate systems," he says. "Now, he or she is asked to lead the way toward improvement, to help formulate strategy, to enable the entire organization and differencute the company in the marketplace, and to prepare the organization for what can be profound, massive changes."

# CDW

Autonomy is a key to being among the best IT employers, says James Shanks, CIO at CDW, one of the companies listed in Computerworld's 1999 100 Best Places to Work in IT. "We leverage traditional technology, telecommunications and e-commerce in our work as an IT organization supporting a computer retailing business."

Shanks discusses if accomplishments at CDW in business terms of using technology to add value

· By adding value to the customer relationship with improved functionality, better integration and timely access to accurate information

. By adding value to the organization from reducing staff and general administration. costs, pius supporting improvements in productivity and capacity

One of the receiver instatives for the company is CDW at Work - an extranet that links customer systems to a customized section of CDW CDM where they can learn about products, availability and pricing

"As we develop these new ways to facilitate customer interactions, we've seeing an exploson of circer opportunities," says Shanks. "There are entirely new positions and opportunities. When I joined the company, we had three people in IT - that was just seven years ago. Today we have 70+ highly trained IT professions who develop our corporate and e-commerce systems. If at CDW has always been viewed as strategic to the surveys of our ownerstation and one of our greatest competitive advantages.

Over the past seven years, Shanks and his colleagues have grown a department according to a strong woon of learning and delivering. "We are called upon to make (udgment) - on whether a technology will add value or benefit to our customers That's out primary objective "

It's natural then that Shanks looks at resumes for signs of continuous improvement "We want to see evidence that you've continued to challenge yourself and haven't just been doing the same thing at different places." he says, "Three's only so much you can tell from a piece of paper, so I try to get involved with the interviewing process. And for me it comes down to passion and pride. By pride, I mean a strong work ethic and by passion, that you are passionate about technology in this fastpeced economic if you aren't passionate it's top easy to burn out."

Sharks also believes that being a top employer means doing things that make sense We work hard to keep processes simple, to get nd of the layers of decision-making My objective is to keep people out of the way so that you can connect the person with the need to the business developer that can build the solution."

Just as important, he adds, is the ability to accept change course. "We have to have the willingues to continuously assess what we're doing and admit that a strategy may not be exactly connect. Whe have to take nots and expect to make some imissive along the way but as long as we learn from those motales; we have grown stronger as a tream That's one of the leve difference between bream a help dock and internal build a business.

Shanks has a short list in terms of advice. "If I could have changed one thing about my career, I would have been a better communicator from the start I'm a farm boy from lows and being raised in that environment has had a greet influence on me – about keeping things smalls, being bonds."

# Consolidated Stores, Inc.

Consolidated Stores is another example of the mon-traditional business at major IT player and employer, as evidenced through its listing on Computerwordr's 1999 100 best Places in Work in IT. Consolidated's dose-our business, in simplest terms, benefits from the errors of other services of the properties of the properties of properties of the properties of ranging from appliances to food—and them selling them through a network of 1.250 stores

that stretches coast to coast.



And while that description is fairly base, the IT infractructure supporting the operation of Big Lets, Odd Lots and McTrugel's Pic-NE-Serie is highly complex. "We are a growth company, and as a department we send to do himps to support provint," says Series Plomet, CIO." We treat people as individually, as we would want to be treated, and our furnitiver is extensively low."

Bromet says the IT projects range from establishing a uniform systems architecture to develop a data wavehousing component that helps the business establish how much of any given item s on hand, and where it is becasted "Our EPP system provides information to the specific is stem, not just the department," says downer. This system has allowed us to improve allocation of imprinted and in John what's selfin ow and with the TS state.

During the coming year, Bromes says the IT group will also focus on understanding and defining a technology strategy for business-to-business and business-to-consumer systems. "Using what we have always developed and this new strategy we'll know what merchandes available, as so in making selections and assign that our purchases make business sense," he signature.

One of the mannings of Consolidated Slows: attractiveness as an IT employer is in Social or existing employers. Whe have but a despiratment that or event to sharing business problems and we believe that the stochastic price then can take care of local through training and existing. "Bornet-specified "social specified and analyse a sharing and existing a "Bornet-specified or on analyse a sharing and existing a "Bornet-specified or the business. The result may make that you will be working with a new technology and new beaming. That it can be the existence specified code to Stayl horiz.

# E-Trade Group, Inc.

Menio Park, CA



Even wethout the stereotypical headquarters persona, E-TRADE has grown by leaps and bounds over the past year and today's making the financial services it offers broader and deeper. "Within each category of financial service, we want to provide customers with the tools and products that enable their investing and retirement needs," Ledger explains.

While being new and one of the hot commodies in the e-commerce world, E-TRADE is workingh had to also be an employer of chace. "Whe have a very dyname rememonment," Says Ledger. "Inst is important to that when you work at E-TRADE, you work with some very amort poole! When we enterevel people for populosis, we make save they with the chance to six with a group of people from it. TRADE. That's when they for your proposed properties of the properties of t

being among the best employers also read on the poperties under way at ETMADE theory way an among the theorem companies of makines according person, and the properties of the properties and the properties are found, and and the art before person are found, and and the art before person are found, the following the content way one person are found, the and to sade whether her minutes. The software to make that proposed hearst reson the resolves are the make that the proposed hearst reson in a second person and spectrum that of the properties of the companies. Yet me the properties of the companies of the companies are the properties of the companies of the companies are the properties of the companies of the companies of the companies are the properties are the properties of the properties are the properties of the properties are the properties are

Ledger says speed and people are the two biggest challenges to remaining all the top of ETRAGE's gains. "And we're not taking about number of heads we need to add, but instead of the score person who is the night person. This is a person looking for the neet smootston, but who can speak both business and markering — in addition to technology. This combination is critical to adjust to brittened time."

Once employees you E-TRADE they face the challenge of working in an environment where III enables every operation. "We work hard to presents self-empowerment and she thinking that to the roll-takes go the rewards. I look for people who can influence decisions, who can take some hear and rise to it," I indiger adds.

Ledge's not confortable talking about himself, but he does have one piece of advertishing a service of the entire of the entir

Similarly Ledger believes his job is not so much technical but more about managing expectations: "Things are so dynamic and changes occur so quickly in that environment, it's easy for folks to have a different set of expectations about deliverables. Over time, if widers. So may obs sally about managing other stateholders' executations."

# The Gillette Co.

Boston, M.



Pat Zilvitis, CIO for The Gillette Co., believes that companies that will lead in the future are those that know they "can't take, make or deliver" without information technology. "Information technology's role has grown from that of a passive support function to a capability that is tightly woven throughout the business," he says.

Geleini-agrouped his sure off it is an evaletive of boroses operations was one of the misconitive company was made to OM Magazine's based on the New Mellerium, Agust 15, 1999. The company-fit elevands samp from the 100 intravel tasts to implicipe knots, companiesed across to better so intravels, and intravel trapolarium for admissible of or continente and supplies. The bogger of the future is a more to liveral limit of the misconitive fit in the sure of the continent of the future is a more to liveral limit in sure sure, we must such an out or chroding be reliant. "Zitte students" All the surer sure, we must such that but province operational liverary, the misconitive surer surer surer in must such that but province operational liverary, the misconitive surer su

Zánta benchmarks how quistly Gifetta II processes can meet bournes needs against maturizer and companies throughout the country, using groups such as the Research Board and the company's vendors. "By and large, in the consumer goods materiaties, our alidity is to despir and more products to the material more quickly and the fairst of our inventory are critical measures. These hos factions have made us early adopties of key technologies that help our slay alread of the competions", "say Zántas. "Whit's year about working with Gillette's IT organization on Light The sarety of projects where you see improperment immediately." The adds: "College is shown on a company of high enterptile," That was important to me as integer; was ground into me from an early age. My later was an immagnite white worked hadge to he challenge outside meaning with worked the hadge to he challenge outside these to the high trainer basic footicis on retiroping and other colle values like excelence in performance. This, combined with appreciate IT eight deposition, is what milke us in a basic in not by participated."

Zhitis sajs he looks for three things when he's considering applicants for Glettre's IT orgarizations. "Figs.) I look at their interpressional wids—how they work one on one and one or many with diverse people who have hereine reprositations. Second, on they undestand the business and how different people work together? And finally, what are the technical skills—how broad and how deep?

"You may be brillant technically, but if you can't express your riess in business or lay terms, nothing will happen. The people who know business and can apply technology to unique business problems, these are the people who are in demand."

While Gillette tooks for this fallent, the company is also tooking at what it offers employees Employees in IT are encouraged on move into and out of business areas like marketing togated, and customer service to gain crucial business skill.

This knowledge sharing is coupled with a focus on just in-time training that allows employees to gain the skills and capabilities necled, and then put them to work immediately Gillette University, a writisal campus of online courses and education, was launched internal. In last way and already has 500 empflers.

And the projects — in addition to the global scaling of more tradecoral EPP and SAP spoems, the company's extending its network with customers and window, while improving the IT security systems. This the coming months well continue to work with our optioners to dentify sends to better serve the end ware—seasition is well not be the more than one to be continued to the continued of the continue

# Schwab Financial Services

San Francisco, CA

Much of the innovation of the online world has occurred in the financial services sector, and there is no financial organization with a more extensive stategy than Schwab Financial Services. This is one of the primary reasons Schwab was listed in 1999 as one of the 100 Best Places to Work in If by COMPUTERWORLD. Fred Matteson, executive vice president of technical services explains; if this was Cskwab is

services, explains it this way: Schwab is interested in the convergence of customer needs through a variety of media.

"There's a mamage under way between business and information technology," Matterion explains, "and that mamage is closer in the financial services world than anywhere else."

Schwalb kingwin as the largoid excommerce see on the sistemer, with testing millions of transcription of the sistement of th

Scholo his registed 20 percent ground per east and Maltinon in quals to good tool. This blacked jimen's that levely slaves percent of comprey technology proceeds to as support and the Schwale to support and the Schwale percent of compression to support of the companying growth in and the Schwale consistent size and the support of the compression to the support of the compression and the Schwale section of the segment of the support of the compression described size of the support section of the stem as experience and the support of the support of the support section of the support of the compression works well as leeping on a move to Conformer more demonstrate and making the a good pales are to work.

Customers are a critical part of the team for Schwab technology employers, says Matteron "Me're constaintly surprised by how customers use and adapt what we offer them. We've seen growth in their use rate of most than 1000 percent. I that strickles every element of our systems and network. We're working more and more soward influrer computing.

"I think in the future you'll see us working more and more at integrating the various channets by which customers access Schwab – you might be walking down the street and use your wheless to browse the marketplace, check your account balance and refer to a map that shows you where the neurest Schwab office is located. Call it pervisive computing or whatever, It's the direction well be going. The explains

While the technology, the pace and the sheer magnitude of use by so million customers is entiring. Matteson offers a second view on why Schwalb has become an employer of choice. "We are a values based organization that's committed to changing the way people most and how they were technologie."

# Staples, Inc.

Staples is best known as the warehousepriced shopping center of office supplies, attracting small and home-based businesses as surely as it attracts major corporate accounts. The company uses technology to attract and keep customers and to provide a one-stup solution and great shopping experience for its customers. It suggressive approach has won acco-

its customers. Its aggressive approach has won accolades from CIO Magazzine's Leaders for the Next Millennium, August 15, 1999 and Computerworld's 1999 100 Best Places to Work in IT.

"Our blackwhip can be boiled down to three retical found prime," says from Light, Supplex excubes on prosterin and OU. Whe have down a very good glob of learning to accounting wild intelligent what is imported to them to make this a great place to work. We we worked und to be the emptyer of choice on New frighted and that's only possible by locating on what propie need every day." This respect for employees is about more than just being now. "Because we listen to our execu-

ites. We've been able to maintain a very first-paced environment where the technology is dynamic. We've implemented leading edge and high impact initiatives. And finally, we've worked hand at being a well immaged team that works on great things and does not meet," Light year. He notes that when he joined Staplies, one reason was the high profile role IT plays in the bus-

He notes that when he joined Stables, one reason was the high profile role IT plays in the busness. "The idea is that we use technology to skell the cost and hassle of running the business. We're working with the business to do great things – and we have a real sense of accomplishment."

The challenges continue, too Currently Stagles is integrating its multiple customer channels timted alones, catalog business, contract statements and excommented. "One of the most exoting efforts we'll be furthering in 2000 is leveraging technology across the channels to better serve the customer. Father than refinementing me technologies or proposate country by country, we'll are plantent for Stagles' world propagate and multiple channels." Light explains.

Light believes that because of the role IT plays in enabling business, more IT professionals will be better positioned to work outside off information technology. "Many of our IT associates have gained a super understanding of the business—and the combination of technical and business skills make them rare contributors who will fill increasingly impactful notes," he says.

The e-burness mediations is all in its only stages, Light points out. "It's a big opportunity—in the own well open products and services, but how we not now burness every dig. I think well only see the pact of change increase. The way we address that is by inmittipling where position." In earth 19 and but at out to burness, we griefly our of the deep and build if mentally continued to the contract of the contra

Operationally, Light believes the FIT group needs to be better at recoluting one capabilities to broader proup.— If a consociate all storce, in instance, mixed on limited prougs. If Togetheral south to develop systems for a small, detectand oner community. Bodie, we're delivering lectrologic to be used by potentially our entire workforce— or develop by our consomers (Labellay in circuit at vers smaller, even by use a few seconds, a schondary based process.—you multiply that by 50,000 execution and in each to be not immorp, responsed use and less frinchers, "he applica-

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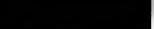
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# New SEC Rules Knock Data Mining Highflier

BY JULEWIA DAY

HREE MONTHS after their release, the SEC's new accounting guidelines have taken their toll on the share price of at least one new

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Data mining firm MicroStrategy
Inc. (NasdagMSTR) in Vienna, Va.,
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the firm's revenue statements
for 1996 and 1999, in an effort

to comply with the new Securities and Exchange Commission (SEC) guidelines.

The announcement prompted sever-

al class-action lawsuits on behalf of investors.

The change reflects the firm's shift in the way it accounts for revenue from



during the period of the contract rather than up front.

than up nous.

The company is expected to report a loss of \$34 million to \$40.3 million for \$42.5 million for \$42.5 million. For 1970, the company's reported revenue could dip from \$30.6 million to between \$59 million and \$301 million. MicroStrategy "is fundamentally still the same company, but will (the news) harmony might be same company, but will (the news).

customers and execute? That's the \$64,000 question," said Steve Abrahamson, an analyst at the Prudential Volpe Technology Group in San Francisco. Other companies — and their audi-

Other companies — and their suditors — may learn from MicroStrategy to be more conservative in how they account for multiyear contracts that include both software licenses and services, said Abrahamson. MicroStrategy uses the accounting services of New York-based PricewaterhouseCoopers.

The SEC's guidelines — which state that companies must have actually delivered a product or service before claiming revenue — really just real force existing accounting principles. But the SEC issued them after a review revealed that some new economy firms weren't following these guidelines. Jon Moody's, an analyst at BB&CT

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Apparently investors felt some renewed confidence in the firm as well.

After sliding further last Tuesday, the stock edged up 16 points on Wednesday, closing as about \$88 per share. 8

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ellay Inc. (H). 30,78 Nobia Cerp. 30,44 Yihoo Inc. 20,18 Adabe Systems Inc. (H). 00,10 Adabe Systems Inc. (H). 00,10 Adabe Systems Inc. (H). 00,10 SGS-Thouseon Microelectronics 10,28 GGS-Thouseon Microelectronics 10,28 Microeofi Corp. 10,28 Microeofi Corp. 10,28	Business Objects S.A.   10.28 Quest Software   18.08 NEC (H)   10.38   PSDNet Inc.   19.08 Ariisa Inc.   10.08 Checkfree   10.08   Hyperiss Software   0.08   Procoss Technic   2.78

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INV JULENIA DABH

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The change reflects the firm's shift in the way it accounts for revenue from



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The company is expected to report a loss of \$34 million to \$40.3 million for last year, rather than a profit of \$12.6 million. For 1998, the company's reported revenue could dip from \$106 million to between \$36 million and \$100 million. MicroStrategy "is fundamentally still.

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Continued from page I

# 3Com

ev, and now the equipment is obsolete," said Wilson The upgrade path for Core-Builder users will be to a switch called BlackDyamond from Extreme Networks Inc.

also in Santa Clara. "I'm not familiar with Extreme," Wilson said. More perplexed than upset was systems administrator

Scott Ivers at pet food company Royal Canin USA in St. Louis. Ivers set up a network using 3Com's SuperStack II Ethernet switches and said be

# Changes at 3Com

3Com will exit the large enter prise market and sell networking equipment to small and midsize businesses and

eBuilder LAN switche Production ands June 30. Coreler will transition to Extreme Net As A 70% discount on Black mand switches will be offered to

ng Core@uilder customers. Builder and NotBuilder

Ltd. (NFL) and Accton Technology Com alliance hubbay 30

Continued from page I

ptory management system to a big group of external users. Scott Smith, manager of Ace's inventory department, also wants to tread carefully to make sure the first participants don't find collaboration a waste of time and money.

"I have a sense of respons bility [to the manufacturers] because I'm kind of pitching them on this idea," he said at a supply-chain conference organized by IBM last week. Ace's example illustrates the cautious steps most users are has been impressed with how easy the network is to manage. He said his next move would have been to install a Core-Builder meitch

Does this mean Cisco takes over?" Ivers asked. "I've never heard of Extreme." Brian Dahill, a network sup-

port analyst at St. Luke's Hospital and Regional Trauma Center in Duluth, Minn., said be wasn't thrilled about the deal either but had beard from an Extreme representative who would be visiting the St. Luke's site this week. "I really hate to think about changing," he said 3Com Senior Vice President Edgar Masri said he understands that users are concerned. But he noted that CoreBuilder products have

two or three years of useful life before their users will need to move to the next generation of switches. "They're certainly not obsolete," he said. Moreover, Masri said, 3Com will continue to support discontinued products for up to five years Masri also said the network management capabilities of

the CoreBuilder 9000 would be ported to Extreme's Black-Diamond line. Not all users were con-

cerned. Ram Prabhu, corporate telecommunications manasser at Millioore Corp. in Bedford, Mass., which uses 3Com's high-end CoreBuilder 9000 network switch, said that representatives from 3Com and Extreme had contacted him

taking toward Web-based col-

efits by using the Internet to

better automate their supply-

Marcia Meyer, president of

Petsmart Inc.'s product sourc-

ing unit, said the Phoenix-

based pet supply retailer has

used Web-based collaboration

with manufacturers to increase

chain activities.

and that be didn't anticipate any major problems going for-

Nigel Oakley, 3Com's vice president of marketing, said the firm would now focus its efforts on small to midsize business networks and home networks and advance its voice-over-IP telephone business, which enables users to send voice conversations over data lines. Like 3Com's spin-off of Palm Inc., the restructuring will allow the company to fo-

cus on markets where it sees : the best growth, said Oakley. 3Com has been \*largely unsuccessful\* in competing with Crsco Systems Inc., Nortel Net-

works Corp. and even Cabletron Systems Inc. in the LAM switching market, said Esmeralda Silva, an analyst at International Data Corp. in Framingham, Mass. Last year, she said, 3Com had a 4% revenue share of the chassis/modular business for local-area netwas 63%. But 3Com has held its. own in the fixed-port LAN sector, with a 25% revenue share. she said.

Giga Information Group Inc. analyst Stan Schatt in Cambridge, Mass., also said 3Com's restructuring is an acknowledament that CoreBuilder was never able to crack into Cisco's

market "The jury is still out on this." Schatt said. "It's an extremely major reorganization. One day working, while Cisco's share later, 3Com is very different." 9

# Auto Dealers Link Up To Launch Web Site

Partnership targets 19,500 NADA dealers

HE REVVING UP OF yet another automobile-related Web partnership pro-mises to stiffen the competition for online car sellers. But analysts disagreeabout how much mileage the dealers involved will get. The National Automobile Dealers Association (NADA) has partnered with Scattlebased Cobalt Group Inc. to launch NADAdealers.com. The

buying staff. More than half the

site will provide a search capa- | dealers in the nation, he said. bility to enable users to locate particular models and dealers by location and will list dealer invoice prices, the companies said. Prices will be negotiated directly with each dealer.

Cobalt Group, which specializes in building and hosting automotive-related Web sines. will jump-start the new venture by bringing its 6,000 dealer clients and their 500,000 new vehicles to the site when it launches in May, said Mike Morrissey, a spokesman for NADA in McLean, Va. The goal is to get most of the association's 19,500 dealers to sign

on. There are 22,000 new-car

Dealers who use Cohalt see vices will be included on the site for free; those who don't can join for \$150 per month, said Cobult spokeswoman Amy Anderson.

A high level of dealer partic ipation on the site would make NADAdealers.com competitive with other online car-selling sites, said analyst Kevin Prouty at AMR Research Inc.

"NADA's stamp of approval on what Cobalt is doing adds a lot of credibility" he said "It's going to depend on how well NADA works with Cobalt" in signing up dealers.

hopes to reduce manufacturporate priority since 1993, said Karen Alber, director of business solutions at the Chicagobased food manufacturer.

But she added that Quaker Oats is only now starting to look at replacing its old business systems with more integrated enterprise resour planning applications that should make supply-chain date

easier to find for end users The company wants to tap technology to do more syn chronized planning with retail ers as well as its suppliers, Al bers said. "But we have to get our own internal information in order before we could head down that med," she added a

laboration between different overseas trips that buyers used companies on key business to take have been eliminated. tasks such as demand forecast-Meyer said. And new products ing and production planning. are being developed faster be-cause specifications and de-Supply-chain collaboration was a hot topic at the confersigns can be exchanged via the ence. And for good reason: Pi-Web, she added. oneering companies expect to reap substantial business ben-But several other users said

they still have technology or business issues to work out before they can take full advantage of collaboration. For example, Lockheed Mar-

tin Co.'s missile division last year launched a collaboration project with five key suppliers on one of its missile programs. Randy Burch, a product develthe number of items it selfs by opment manager at the Dallas-

ing cycle times by up to 15%. But for now, missile designs and production plans have to be extracted from Lockheed Martin's systems and converted into separate electronic documents. Direct Web-based collaboration won't be possible until the SAP AG supplychain software used by the missile unit gets upgraded lat-er this year, Burch said.

Lockheed Martin is waiting for that to happen before it starts implementing collaborative approaches across all the division's product groups, be added. The Ouaker Oats Co. has





FRANK HAYES/FRANKLY SPEAKING

# Making the grade

T'S ANOTHER FAILING REPORT CARD for IT. Last week, The Boston Consulting Group released a study that says, in effect, we're butchering our enterprise projects. You know the ones: ERP and customer relationship management, supply chains and e-commerce. Two-thirds of our big projects were pegged as unsuccessful overall. That's despite the fact that more than 40% finished on time and on budget and that 60% of the executives who signed off on the projects said they were worth the cost.

keep from

failing at our

enterprise

projects?

But when the projects were scored for value creation, cost-effectiveness, financial impact and business goals, only 33% were deemed

Actually, there's plenty of good news in this study. A few years ago, surveys said that only 16% of software projects - that's one in six were completed on time and nn budget. Today, we're up to 41%. That's a buge improvement. And a few years ago, a third of

all big software projects were canceled outright. That kind of failure used to be routine. Today, an ERP project that completely crashes and burns creates headlines and lawsuits. That kind of failure is no longer accepted. We've come a long way.

But you know we're got to get kicked around for these new numbers. Never mind that the rules have been changed and that the bar has been raised Never mind why those projects didn't "succeed." IT will get stomped no for not delivering

So why not? What's missing? The management gurus at Boston Consulting think we need better up-front analysis, clearer strategic vision and tighter project management, Yeah, we've all heard that before

But maybe it's simpler than that. Maybe what's missing from our enterprise projects is the rest

Look, these days our organizations don't just need to support business functions with technology. That's what we used to deliver. We can spec out a business function. We can turn it into code. We know how to do that.

But today, our organizations need to run the whole business on technology - and run it faster and better and let everyone work at a higher level and kick everything up a gear.

That's not like any application we've ever

delivered before. That's technology as a business platform.

Great idea, huh? Of course, we don't have the products to deliver that kind of platform. Or the technical expertise. Or, most important, the indepth knowledge of the whole business and the connections with users and the clout in the executive suite - all things we'd need in order to create an IT business platform.

We can hammer on vendors for the products. Maybe we can rent the technical expertise from consultants. But even when those are available to transform the business - that's what these enterprise projects are supposed How can we to do, right? - we've got to have the rest of the business on the project too

> And that's a tough sell, inside and outside the IT shop. The businesspeople think it's our job. They don't want to be bothered. And lots of IT people don't want users anywhere near what we do. But we can't do it without

them. We've got to have their people for testing and feedback. And their meeting time to hammer out the shape of new business processes. And their knowledge of what works in the business and what doesn't, what's fine and what needs fixing. And their commitment and determination to set it right

So, yeah, let's make sure we've got good analysis and strategic vision and project management. That's a start.

But then let's make sure we've got the rest of the enterprise hip-deep in our enterprise projecte too That's the only way we can keep from failing again.

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THAT BIG-THREE automaker B-to-B aliance in February is ne waves, Sharky hears, One ERP vender was two weeks specific feetures for its flagship product when the announcement ht the streets, reports a pilot heb. Now those now leatures are on hold, and all the customers and prospects who were counting on them "are left out to dry at the neal," says the fish. But don't feel sale if you don't make car

warehouse project. The Isam decides on Oracle Desemer 6.0 for the data modeling and database design. Wat, grumbles the newly formed corporate archi-tecture team, Oracle Designer isn't on our list of approved tools. But the architecture cops finally rejent after the data wore house ours his for an exception and point out that no detabase sign tools of any kind are on the list - and the architecture guys have no immediate plans

to evaluate any.

cauld become to you too

BIG CORPORATEWIDE data

WHILE LAYING OFF half the orkers in a manufacturing divesion, the corporate controller gets a bransform; eliminate the IT shop and move all of its functions to a sieter plant, Sister plant's IT group protests: "You're manframe, we're micrance nothing will world" Controller pink-slips everyone but an open ator and a date entry clerk. Total savings not much because most of the staff has to be brought back as consultants says a plot fish. And the controller? "Canned the next year for some equally enlightened decision" the fish says

A consultant pilot fish at one big software vendor that added a consulting arm last year words. me to send his Shark shirt to the boss. We have not had a single contract approved from legal in fice is on the bench" he comclains. Hey, If Mr. Wang wents a shirt, he'll have to feed the Shark a little something himse arkyffcomputerworld.com d see blood in the water daily at computerworld.com/sharis

# The 5th Wave



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It takes powerful
SOftWare
to expand from
one store to
20 million
customers a day.

That's the software IBM makes.



WebSphere" Commerce Suite is designed for the life of your site. From startup in as fast as 60 days to the customer relationship management

IBM.

tools used by Web sites of 40 of the top 100 retailers. For a free e-commerce Roadmap, visit www.ibm.com/software/souk/getroadmap YEARS AHEAD OF THEM

NOW DO NO CET TO BE THE WORLD'S LADONE RESIDENT PLANEAGEMENT [19] WITE Ringshow," you do a by working my processes the leaves in dismarks a course revolution, releaved good leaves. But he gas the factions of college, occuping memory design with PCL33 and DOR. You do it by updays your engering sail and mensure, never \$100 million to apport high-valuing productions of nines certifieng southful of memory, the dot is by developing memory for resonances knowed systems, who ERAM and system manufactures like Islands." and Isoladss' and you always also every memory models with systems. We ERAM and system manufactures like Islands' and Isolads' and you always also every memory models with systems. We ERAM and system manufactures like Islands' memory and the DOR and Isolads' and you always also every memory models with systems excessed in the control of the c

